#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.06.98 Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump

Pump designation : PE6P120A320RS7412

EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1381K

Governer no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer—spec. information Customer : DAF

Motor

: XF 250

Power KW

: 250.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

x inside diameter: 3.0

x length mm :

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Rack travel in mm: 11.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: + 0.75

Start of delivery mark

Tolerance

: +- 0.10

Check

tolerance "NW

: +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm :

980

Rack travel in mm : 11.35

Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 245.0

A01

	+ Rated speed rpm : 1282
Tolerance cm3/1000 strokes : + 1.0	guide sleeve : 12.00
	+ Tolerance mm : +- 0.25
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1370 guide sleeve
Spreed	+ travel mm : 13.50 + Tolerance mm : + 0.50
Tolerance	T roterance min . + 0.50
cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION
Check tolerance	-
cm3/1000s. : 9.0	Rated speed rpm : 1263
	Rack travel in mm : 10.50
	+ Tolerance mm : +- 1.30
Rated speed rpm : 275	†
Rack travel in mm : 3.70	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : +- 0.10	T FOLL LOAD DELIVERY AT FOLL LOAD STOP
Del. quantity	Rated speed rpm . 980
cm3/1000 strokes : 13.5	Aneroid pressure
Tolerance	+ hPa : 1500
cm3/1000 strokes : +- 3.0	+ Del. quantity
Check tolerance cm3/1000s. : +- 6.0	+ cm3/1000 strokes : 245.0
cm3/1000s. : +- 6.0 Spreed	+ Tolerance + cm3/1000 strokes : +- 1.0
Tolerance	Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : +- 4.0
Check tolerance	+ Spreed
cm3/1000s. : 12.0	+ Tolerance
	+ cm3/1000 strokes : 5.0
(B) SETTING OF INJECTION PUMP	+ Check tolerance + cm3/1000s. : 9.0
WITH GOVERNOR	1 (1113) 10003.
	+
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER
Rated speed rpm : 1055	T control lever
guide steeve	position degree : 110.0
travel mm : 7.47	tolerance degree : + 4.0
Tolerance mm : +- 0.15	+
Rated speed rpm : 275	+ RATED SPEED
Rated speed rpm : 275 guide sleeve	+ rack travel mm : 10.50 + Rated speed rpm : 1045
travel mm : 2.04	Tolerance 1/min : +- 5
Tolerance mm : + 0.20	+ Check
	- speed 1/min : +- 10
Rated speed rpm : 820	+
guide sleeve	+ rack travel mm : 4.00
travel mm : 5.14 Tolerance mm : + 0.25	+ Rated speed rpm : 1130 + Tolerance 1/min : +- 15
TOTAL INC TO U.23	+ Tolerance 1/min : +- 15 + Check
Rated speed rpm : 480	- speed 1/min : +- 20
guide sleeve	+
travel mm : 3.34	rack travel mm : 0.70
Tolerance mm : +- 0.25	+ Tolerance mm : + 0.70
	+ Rated speed rpm : 1275

LOW IDLE	
control lever position degree : tolerance degree :	74.0 ► 4.0
Setting point w/out b	oumper spring
Rated speed rpm :	175
CRT mm min. : >	6.80
Testing:	
Rated speed rpm : rack travel mm : Tolerance mm : H	275 3.70 ⊢ 0.10
Rated speed rpm :	300
TORQUE CONTROL Rated speed rpm : rack travel mm : Tolerance mm :	980 11.35 → 0.10
rack travel mm :	900 11.50 ► 0.10
Rated speed rpm : rack travel mm : Tolerance mm : H	750 11.85 ├- 0.05
	700 11.75 0.10
Rated speed rpm : rack travel mm : Tolerance mm : d	600 11.30 0.10
Rated speed rpm : rack travel mm : Tolerance mm : H	500 10.90 ► 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm : Pressure hPa :	775 1500

rack travel mm Tolerance mm	: 11.85 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 775 : 460 : 11.00 : + 0.05
MEASUREMENT	
Rated speed rpm	: 775
Pressure hPa rack travel mm Tolerance mm	: - : 8.30 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 250 : 9.30 : ← 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 11.85 : + 0.05 : 283.0 : + 2.0 : + 6.0 : 10.0 : 15.0
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 11.85 : + 0.05 : 283.0 : + 2.0 : + 6.0
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm	: 1500 : 750 : 11.85 : + 0.05 : 283.0 : + 2.0 : + 6.0
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Aneroid pressure hPa	: 1500 : 750 : 11.85 : + 0.05 : 283.0 : + 2.0 : + 6.0 : 10.0 : 15.0

hPa	:	_
Rated speed rpm	:	600
Del. quantity		
cm3/1000 strokes	:	188.0
Tolerance		
cm3/1000 strokes	: 4	- 1.0
Check tolerance		
cm3/1000s.	: +	<del>-</del> 4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	10.0
Check tolerance		
cm3/1000§.	:	15.0

# LOW IDLE

Rated speed rpm	:		275	
Rack travel in mm Tolerance mm Del. quantity	:		3.70 0.10	
	:		13.5	
Tolerance cm3/1000 strokes	:	+-	3.0	
Check tolerance cm3/1000S.	:	+-	6.0	
Spreed Tolerance				
	:		8.0	
cm3/1000s.	:		12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 22.06.98

Edition : 22.06.98
Test oil : ISO 4113

Combination No. : 0 402 648 708

Injection pump

Pump designation : PE8P120A320LS7927 EP type number : 0 412 628 934

Governor

Governer design. : RQ300/1050PA1389

Governer no. : 0 421 801 836

Cust. part No. :

Customer—spec. information

Customer : DHI Motor

: DV15TIS Euro II

Power KW

: 310.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar :

Tolerance bar : + 0.1

1.5

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : +- 1.5

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Test lines : 1 680 750 089

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 8

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 13.85

Tolerance mm :  $\leftarrow$  0.05

		+ guide sleeve
Del. quantity		travel mm : 3.98
cm3/1000 strokes	: 258.0	Tolerance mm : + 0.10
Tolerance	<del></del>	Rated speed rpm : 560
cm3/1000 strokes	: +- 1.0	+ guide sleeve
		+ travel mm : 6.00
Check tolerance		+ Tolerance mm : + 0.10
cm3/1000s.	: +- 4.0	
		Rated speed rpm : 1290
Spreed		+ guide sleeve
		† travel mm : 11.50
Tolerance		† Tolerance mm : +- 0.50
cm3/1000 strokes	: 7.0	+
	·	
Check tolerance		+ GUIDE SLEEVE POSITION
cm3/1000s.	: 10.0	†
		†
		+ control lever
	700	+ position degree : 106
Rated speed rpm	: 300	+ Rated speed rpm : 800
Dank Annual in my	. 4.00	Total Annual in the 10 (0
Rack travel in mm	: 6.00 : ← 0.10	+ Rack travel in mm : 19.40
Tolerance mm	: +- 0.10	+ Tolerance mm : +- 0.60
Del. quantity cm3/1000 strokes	: 18.0	†
Tolerance	10.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: +- 3.0	T FOLL LOAD DELIVER! AT FOLL LOAD STOP
Check tolerance	3.0	Rated speed rpm : 1050
cm3/1000s.	: <del>←</del> 6.0	+ Aneroid pressure
Spreed	0.0	+ hPa : 1800
Tolerance		+ Del. quantity
cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : 258.0
Check tolerance	. 5.0	+ Tolerance
cm3/1000s.	: 8.0	+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
		+ cm3/1000s. : +- 4.0
(B) SETTING OF IN.	JECTION PUMP	Spreed
WITH GOVERNOR		+ Tolerance
		+ cm3/1000 strokes : 7.0
		+ Check tolerance
GUIDE SLEEVE TRAVE	EL	+ cm3/1000s. : 10.0
		+
Rated speed rpm	: 1108	†
guide sleeve	. 74	
travel mm	: 6.36	+ CONTROL LEVER
Tolerance mm	: +- 0.15	†
5.4.dd	. 700	+ control lever
Rated speed rpm	: 300	+ position degree : 34.0
guide sleeve travel mm	: 1.31	tolerance degree : +- 4.0
Tolerance mm	: ← 0.20	† control lever
TO CET GITCE THIII	0.20	+ position degree : 96.0
Rated speed rpm	: 1050	tolerance degree : +- 4.0
guide sleeve		+
travel mm	: 6.00	A RATED SPEED
Tolerance mm	: +- 0.10	+ rack travel mm : 12.60
-		+ Rated speed rpm : 1102
Rated speed rpm	: 441	Tolerance 1/min : +- 8

rack travel mm	: 4.00	+ Pressure hPa	: 1800
Rated speed rpm	: 1200	+ rack travel mm	: 13.85
Tolerance 1/min	: +- 15	+ Tolerance mm	: +- 0.10
		+	
rack travel mm	: 0.50	+ Rated speed rpm	: 500
Tolerance mm	: <b>←</b> 0.50	+ Pressure hPa	: -
Rated speed rpm	: 1300	+ rack travel mm	: 8.50
		† Tolerance mm	: +- 0.20
		†	
		+ 2-stage LDA sett	ing
LOW IDLE		T Batad anged ann	: 500
LOW INCE		+ Rated speed rpm + Pressure hPa	: 800
		rack travel mm	: 12.65
control lever		T I don't daet likil	. 12.05
position degree	: 71.0	→ MEASUREMENT	
tolerance degree		1	
to to the total		Rated speed rpm	: 500
control lever		+	
position degree	: 10.0	+ Pressure hPa	: 600
tolerance degree	: +- 4.0	+ rack travel mm	: 11.70
		+ Tolerance mm	: +- 0.20
Setting point w/o	out bumper spring	+	
		† Pressure hPa	: 300
Rated speed rpm	: 200	+ rack travel min	: 9.60
	7.50	† Tolerance mm	: <b>←</b> 0.05
CRT mm min.	: > 7.50	†	4/00
Tankina.		Pressure hPa	: 1400
Testing:		+ rack travel mm	: 13.50
Pated speed rom	: 300	† Tolerance mm	: <del>+-</del> 0.10
Rated speed rpm rack travel mm	: 6.00	+ Pressure hPa	: 1200
Tolerance mm	: + 0.10	rack travel mm	: 12.90
roter arice min	0.10	Tolerance mm	: +- 0.05
rack travel mm	: 2.00	+ Total last man	0.05
Rated speed rpm	: 430		
Tolerance 1/min	: +- 30	+ Start interlock	
		+	
		+ Rated speed rpm	: > 205
TORQUE CONTROL		+ Rated speed rpm	: < 250
Rated speed rpm		+	
rack travel mm	: 13.85	+ Check	
Tolerance mm	: <b>+-</b> 0.05	+ speed 1/min	: > 185
Datad assaul suss		+ Check	2/0
Rated speed rpm	: 600 : 13.85	+ speed 1/min	: < 260
rack travel mm Tolerance mm	: + 0.10	T	
rocerance min	. 4- 0.70	FUEL DELIVERY CHA	APACTEDISTICS
Rated speed rpm	: 500	+ OCC DELIVERY CITY	WHO I ENTO I TOO
rack travel mm	: 12.65		··
Tolerance mm	: +- 0.10	+ Aneroid pressure	
•		+ hPa	: 1800
		+ Rated speed rpm	
ANEROID/ALTITUDE		<pre>Del. quantity</pre>	
COMPENSATOR TEST		+ cm3/1000 strokes	: 264.0
		Tolerance	_ 2
		+ cm3/1000 strokes	: +- 3.0
SETTING		+ Check tolerance	
Data al ana a -1	. 500	+ cm3/1000s.	: <del></del> 6.0
Rated speed rpm	: วบบ	+	

A07

Aneroid pressure

hPa : 800 Rated speed rpm : 500

rack travel mm : 12.65 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 229.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  4.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 128.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 233.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.06.98 Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RQV350...1050PA1318

Governer no. : 0 421 814 185

Cust. part No. : 0270746302

Customer—spec. information Customer : MB-NFZ Motor : 0M442 LA Power KW : 370.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 130
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. 8

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.30 Tolerance mm : + 0.05

	- guide sleeve
Del. quantity cm3/1000 strokes : 272.0	travel mm : 3.62 Tolerance mm : + 0.25
Tolerance - cm3/1000 strokes : + 1.0	Rated speed rpm : 1204 guide sleeve travel mm : 10.00
Check tolerance cm3/1000s. : + 4.0	Tolerance mm : +- 0.25
Spreed	Rated speed rpm : 1300 guide sleeve travel mm : 11.50
Tolerance cm3/1000 strokes : 5.0	travel mm : 11.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 9.0	GUIDE SLEEVE POSITION
	r - control lever
	position degree : - 1
Rated speed rpm : 350	Rated speed rpm : 1174
Rack travel in mm : 4.80	Rack travel in mm : 11.00
Tolerance mm : +- 0.10	Tolerance mm : + 1.30
Del. quantity	
cm3/1000 strokes : 19.0	
Tolerance - cm3/1000 strokes : +- 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	Rated speed rpm : 1050
cm3/1000s. : +- 6.0	Aneroid pressure
Spreed -	hPa : 1800
Tolerance - cm3/1000 strokes : 6.0 -	Poel. quantity cm3/1000 strokes : 272.0
Check tolerance	Tolerance
cm3/1000s. : 10.0	cm3/1000 strokes : + 1.0
†	Check tolerance
(B) SETTING OF INJECTION PUMP	cm3/1000s. : +- 4.0 - Spreed
WITH GOVERNOR	Tolerance
	cm3/1000 strokes : 5.0
CITAL OF THE TRANS	Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : 9.0
Rated speed rpm : 1106	}
guide sleeve - travel mm : 8.02	CONTROL LEVED
travel mm : 8.02 - Tolerance mm : +- 0.15	CONTROL LEVER
-	control lever
Rated speed rpm : 350 -	position degree : 122.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 1.48 - Tolerance mm : +- 0.20 -	RATED SPEED
	rack travel mm : 14.30
Rated speed rpm : 900 -	Rated speed rpm : 1095
guide sleeve travel mm : 5.69	Tolerance 1/min : +- 5
Tolerance mm : +- 0.25	rack travel mm : 4.00
Total Gride IIIII	Rated speed rpm : 1190
Rated speed rpm : 580	Tolerance 1/min : +- 15
7	Γ

rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300 LOW IDLE control lever position degree : 66.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 250 CRT mm min. :> 7.00Testing: Rated speed rpm : 350 rack travel mm : 4.80 Tolerance mm : + 0.10 Rated speed rpm : 450 TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 15.30 Tolerance mm : + 0.05 Rated speed rpm : 800 rack travel mm : 15.30 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING CRT ZERO POSITION Rack travel in mm : 8.40 Tolerance mm :  $\leftarrow$  0.20 Rated speed rpm : 500 Pressure hPa MEASUREMENT Pressure hPa : 700 rack travel mm : 5.00 Tolerance mm : +- 0.20

rack travel mm : 0.40 Tolerance mm : +- 0.05 Start interlock Rated speed rpm : > Rated speed rpm : < 100 270 Check speed 1/min : > 80 Check speed 1/min : < 290 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1800 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 140.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 REDUCED QUANTITY Aneroid pressure : 1800 Rated speed rpm : 1050 rack travel mm : 11.70 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 206.0 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000S. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 270.0

Pressure hPa : 180

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 4.80 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.98 Test oil : ISO 4113

Combination No. : 0 402 648 967

Injection pump

Pump designation : PE8P12CA32OLS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

Governer no. : 0 421 815 361

Cust. part No. : 9275447

Customer—spec. information Customer : LIEBHERR Motor : D 9408 TI Power KW : 400.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 190
Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : + 0.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : +- 1.0

. . 1.0

Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 450 guide sleeve
Spreed	travel mm : 3.66 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1320
Check tolerance cm3/1000s. 9.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
	GUIDE SLEEVE POSITION
Rated speed rpm : 350	‡
Rack travel in mm : 4.90 Tolerance mm : + 0.10 Del. quantity	control lever position degree : - 1 Rated speed rpm : 1185
cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : + 3.0	Rack travel in mm : 10.80 Tolerance mm : +- 2.70
Check tolerance cm3/1000s. : +- 6.0 spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 6.0 Check tolerance	Rated speed rpm : 1050 Aneroid pressure
cm3/1000s. : 10.0	+ hPa : 1600 + Del. quantity + cm3/1000 strokes : 300.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : + 4.0 Spreed
Rated speed rpm : 1117 guide sleeve	Tolerance cm3/1000 strokes : 5.0 Check tolerance
travel mm : 10.38 Tolerance mm : +- 0.25	- cm3/1000s. : 9.0
Rated speed rpm : 300 guide sleeve travel mm : 1.69	CONTROL LEVER
Tolerance mm : +- 0.25	control lever position degree : 119.0
Rated speed rpm : 746 guide sleeve	tolerance degree : +- 4.0
travel mm : 6.20 Tolerance mm : + 0.25	+ RATED SPEED + rack travel mm : 11.75 + Rated speed rpm : 1110
Rated speed rpm : 353 guide sleeve travel mm : 2.45	Tolerance 1/min : +- 5 rack travel mm : 4.00
Tolerance mm : +- 0.25	rack travel mm : 4.00 Rated speed rpm : 1205 Tolerance 1/min : +- 15
Rated speed rpm : 403 guide sleeve travel mm : 3.18	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50
Tolerance mm : + 0.25	+ Rated speed rpm : 1300

LOW IDLE	
control lever position degree tolerance degree	: 75.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.80
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.90 : + 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.75 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.30 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 550 : 10.45 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.40 : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.60 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 550 : 1600 : 10.45 : +- 0.10
Rated speed rpm	: 550

rack travel mm Tolerance mm	: - : 9.15 : + 0.20	
MEASUREMENT		
Rated speed rpm	: 550	
Pressure hPa rack travel mm Tolerance nm	: 630 : 10.10 : → 0.05	
Pressure hPa rack travel mm Tolerance mm	: 575 : 9.75 : + 0.15	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 290	
Check speed 1/min Check	: > 80	
speed 1/min	: < 300	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure	4.00	
hPa Rated speed rpm Del. quantity cm3/1000 strokes		
Rated speed rpm	: 500 : 292.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 500 : 292.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 500 : 292.0 : + 3.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 500 : 292.0 : + 3.0 : + 6.0 : 10.45 : + 0.10 : 1600 : 700 : 299.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 500 : 292.0 : + 3.0 : + 6.0 : 10.45 : + 0.10 : 1600 : 700	

Del. quantity cm3/1000 strokes : 242.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.15 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 200.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 20.0

### LOW IDLE

Rated speed rpm : **3**50 4.90 Rack travel in mm : Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000S. 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000S. 10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.06.98 Test oil : ISO 4113

Combination No. : 0 402 648 967A

Injection pump

Pump designation : PE8P120A320LS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

Governer no. : 0 421 815 361

Cust. part No. : 9275448

Customer—spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 190
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke min : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-8-7-2-6 :-3-5-4

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : +- 1.0

A17

Check tolerance cm3/1000S. : + 4.0	+ Rated speed rpm : 450 + quide sleeve
Spreed	travel mm : 3.66 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1320
Check tolerance cm3/1000s. : 9.0	+ guide sleeve + travel mm : 13.50 + Tolerance mm : + 0.50
	GUIDE SLEEVE POSITION
Rated speed rpm : 350	‡
Rack travel in mm: 4.90 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 30.0	control lever position degree : - 1 Rated speed rpm : 1185
Tolerance cm3/1000 strokes : +- 3.0	Rack travel in mm : 10.80 Tolerance mm : + 2.70
Check tolerance cm3/1000S. : +- 6.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 6.0	Rated speed rpm : 1050
Check tolerance cm3/1000S. : 10.0	+ Aneroid pressure + hPa : 1600 + Del. quantity
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- cm3/1000 strokes : 300.0 Tolerance - cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : + 4.0 + Spreed + Tolerance
Rated speed rpm : 1117 guide sleeve	cm3/1000 strokes : 5.0 Check tolerance
travel mm : 10.38 Tolerance mm : + 0.25	+ cm3/1000s. : 9.0
Rated speed rpm : 300 guide sleeve	CONTROL LEVER
travel mm : 1.69 Tolerance mm : + 0.25	control lever position degree : 119.0
Rated speed rpm : 746 guide sleeve	tolerance degree : +- 4.0
travel mm : 6.20 Tolerance mm : +- 0.25	+ RATED SPEED + rack travel mm : 11.75 + Rated speed rpm : 1110
Rated speed rpm : 353 guide sleeve travel mm : 2.45	Tolerance 1/min : + 5  rack travel mm : 4.00
Tolerance mm : + 0.25	Rated speed rpm : 1205  Tolerance 1/min : + 15
Rated speed rpm : 403 guide sleeve travel mm : 3.18	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Tolerance mm : +- 0.25	+ Rated speed rpm : 1300

#### LOW IDLE

control lever

75.0 position degree : tolerance degree : + 4.0

Setting point w/out bumper spring

200 Rated speed rpm :

CRT mm min. :>6.80

Testing:

Rated speed rpm : 350 4.90 rack travel mm Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 12.75 : +- 0.05 Tolerance mm

500 Rated speed rpm : rack travel mm 10.30 : + 0.10 Tolerance mm

Rated speed rpm : 550 rack travel mm 10.45 : **←** 0.10 Tolerance mm

Rated speed rpm : 700 rack travel mm : 11.40 : **←** 0.15 Tolerance mm

Rated speed rpm : 950 rack travel mm : 12.60 : **←** 0.15 Tolerance mm

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 550 : 1600 Pressure hPa : 10.45 rack travel mm : **←** 0.10 Tolerance mm

Rated speed rpm : 550

Pressure hPa rack travel mm 9.15 : +- 0.20 Tolerance mm

### **MEASUREMENT**

Rated speed rpm 550

Pressure hPa 630 rack travel mm 10.10 : **←** 0.05 Tolerance mm

Pressure hPa : 575 rack travel mm : 9.75 Pressure hPa 575 : **←** 0.15 Tolerance mm

#### Start interlock

Rated speed rpm :> 100 Rated speed rpm : < 290

Check

speed 1/min : > 80 Check

speed 1/min : < 300

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1600 Rated speed rpm 500 Del. quantity

cm3/1000 strokes : 292.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance

cm3/1000s.

: +- 6.0

rack travel mm : 10.45 Tolerance mm : + 0.10

Aneroid pressure

1600 hPa Rated speed rpm 700 Del. quantity

cm3/1000 strokes : 299.0

Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

550 Rated speed rpm :

Del. quantity cm3/1000 strokes : 242.5 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.15 Tolerance mm : + 0.30 Del. quantity

cm3/1000 strokes : 200.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 20.0

### LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 4.90
Tolerance mm: + 0.10

Del. quantity

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.98 Test oil : ISO 4113

combination No. : 0 402 744 809

Injection bumb

Pump designation : PES4P120A320RS7312

: -1

EP type number : 0 412 724 803

Governor

Governer design. : RQV400...1200PA1397

Governer no. : 0 421 814 212

Cust. part No. : 51.11103-7579

Customer-spec. information Customer : MAN

: 0 0824 LOH 05 Motor

: 114.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.25 · + 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

: 1-3-4-2 Firing order

: 0-90-180-270 Phasing

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.80 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 208.0

Tolerance - cm3/1000 strokes : +- 1.0 -	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : +- 4.0	
Spreed	GUIDE SLEEVE POSITION
Tolerance - 8.0 -	control lever position degree : 109 Rated speed rpm : 1322
Check tolerance	Rack travel in mm : 11.80 Tolerance mm : + 1.30
Rated speed rpm : 400 -	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.80 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 40.0 Tolerance cm3/1000 strokes: + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 208.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1261 - guide sleeve - travel mm : 10.26 - Tolerance mm : + 0.15	position degree : 302.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.80
Rated speed rpm : 400 -	Rated speed rpm : 1250 Tolerance 1/min : +- 8
travel mm : 2.21 - Tolerance mm : + 0.20 -	rack travel mm : 4.00 Rated speed rpm : 1345 Tolerance 1/min : +- 15
Rated speed rpm : 822 - guide sleeve - travel mm : 5.79 - Tolerance mm : + 0.25 -	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1400
Rated speed rpm : 500 - guide sleeve - travel mm : 3.53 - Tolerance mm : + 0.25 -	LOW IDLE
Rated speed rpm : 1490 -	

control lever position degree tolerance degree	: 262.0 : ← 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 300
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 4.80 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 494 : + 20
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.80 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 12.80 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 12.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 8.60 : ← 0.15
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 140 : 8.90 : ← 0.10

Pressure hPa : 450 rack travel mm : 11.80 Tolerance mm : +- 0.15 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1200 Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 208.0 Tolerance cin3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure hPa : 1200 Rated speed rpm : 700 rack travel mm : 12.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 217.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 136.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 6.0 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 strokes : + 10.0Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm	:	400
Rack travel in mm Tolerance mm Del. quantity	:	4.80 +- 0.10
cm3/1000 strokes Tolerance	:	40.0
cm3/1000 strokes Check tolerance	:	+- 3.0
cm3/1000s.	:	<del>+</del> 6.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

**Edition** : 19.06.98 Test oil : ISO 4113

Combination No. : 0 402 746 609

Injection bumb

Pump designation : PES6P130A720RS7411

EP type number : 0 412 736 808

Governor

Governer design. : RQ275/950PA1274 Governer no. : 0 421 801 807

Cust. part No. : 645 739

Customer-spec. information

Customer : RABA

Motor : SIEHE BEMERKUNG Power KW : 190.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. l/h : 160 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.50
Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **+−** 0.75

Start of delivery mark

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.90 Tolerance mm : + 0.05

1	l quide allegre
N-1 minutia	guide sleeve
Del. quantity -	travel mm : 4.45
cm3/1000 strokes : 224.0 -	Tolerance mm : +- 0.10
Tolerance	Rated speed rpm : 450
cm3/1000 strokes : $+$ 1.0	guide sleeve
	travel mm : 6.00
Check tolerance	├ Tolerance mm : ← 0.10
cm3/1000s. : +- 4.0	
	Rated speed rpm : 1200
Spreed -	guide sleeve
	travel mm : 11.50
Tolerance	Tolerance mm : + 0.50
cm3/1000 strokes : 5.0	L
31107 1000 301 0K00 .	
Check tolerance	GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	GOIDE SEEEVE 1 OSTATOW
CIID/ 10003 /.0	
	control lever
7	
Poted speed ppm · 275	
Rated speed rpm : 275	Rated speed rpm : 900
Book above in the second second	Book though in my . 30.00
Rack travel in mm: 4.20	Rack travel in mm : 20.00
Tolerance mm : + 0.10	Tolerance mm : + 0.80
Del. quantity	
cm3/1000 strokes : 24.0	
Tolerance -	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : $+$ 3.0	
Check tolerance	Rated speed rpm : 600
cm3/1000s. : $+$ 6.0	Aneroid pressure
Spreed -	hPa : 1500
Tolerance	Del. quantity
cm3/1000 strokes : 8.0	cm3/1000 strokes : 224.0
Check tolerance	Tolerance
cm3/1000s. : 12.0	cm3/1000 strokes : + 1.0
. 1270	Check tolerance
	cm3/1000s. : +- 4.0
(B) SETTING OF INJECTION PUMP	Spreed
WITH GOVERNOR	Tolerance : 5.0
Curre di cour TRAVEL	Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : 9.0
Dated made non	
Rated speed rpm : 1007	
guide sleeve	
travel mm : 6.56	CONTROL LEVER
Tolerance mm : + 0.15	
	control lever
Rated speed rpm : 275 -	position degree : 33.0
guide sleeve -	tolerance degree : +- 4.0
travel mm : 2.06	
Tolerance mm : +- 0.20 -	- control lever
	position degree : 95.0
Rated speed rpm : 950	tolerance degree : + 4.0
guide sleeve	
travel mm : 6.00	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 10.90
	Rated speed rpm : 995
Rated speed rpm : 361	Folerance 1/min : +- 5
ngteu specu rpm . Jul	Totaline 1/11111

rack travel mm : 4.00 Rated speed rpm : 1095 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1200	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 8.20 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500
<u> </u>	Pressure hPa : 260 rack travel mm : 9.20
LOW IDLE	rack travel mm : 9.20 Tolerance mm : + 0.15
+	Pressure hPa : 440
control lever position degree : 73.0 tolerance degree : + 4.0	rack travel mm : 11.00 Tolerance mm : +- 0.05
control lever + 12.0 + 12.0	Start interlock
tolerance degree : + 4.0	Rated speed rpm : > 175 Rated speed rpm : < 200
Setting point w/out bumper spring	Check
Rated speed rpm : 175	speed 1/min : > 155 Check
CRT mm min. : > 6.80	speed 1/min : < 220
Testing:	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 275	
rack travel mm : 4.20 Tolerance mm : + 0.10	Anaraid processes
Toterance min : TO U. ID	Aneroid pressure hPa : 1500
rack travel mm : 2.00	Rated speed rpm : 950
Rated speed rpm : 335	Del. quantity
Tolerance 1/min : + 20	cm3/1000 strokes : 219.5 Tolerance
	cm3/1000 strokes : +- 3.0
TORQUE CONTROL  Rated speed rpm : 600  rack travel mm : 11.90  Tolerance mm : + 0.05	Check tolerance cm3/1000s. : +- 6.0
+	Aneroid pressure
Rated speed rpm : 950	hPa : -
rack travel mm : 11.90 Tolerance mm : + 0.10	Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 147.0
	Tolerance
ANEROID/ALTITUDE	$cm3/1000$ strokes : $\leftarrow$ 2.0
COMPENSATOR TEST	Check tolerance cm3/1000s. : +- 4.0
SETTING	
Rated speed rpm : 500 Pressure hPa : 1500	STARTING FUEL DELIVERY
rack travel mm : 11.90 Tolerance mm : + 0.05	Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity cm3/1000 strokes : 110.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance : +- 24.0

### LOW IDLE

cm3/1000s.

Rated speed rpm : 275 Rack travel in mm : 4.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 24.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.06.98 : ISO 4113 Test oil

Combination No. : 0 402 846 302

Injection pump

Pump designation : PE6P120A320RS8520 EP type number : 0 412 826 202

Governor

Governer design. : RQV275...1000PA1269K

Governer no. : 0 421 815 969

Cust. part No. : 1310222/2

Customer—spec. information : DAF Customer : XF 355 M Motor Power KW : 355.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.C Tolerance bar : +- 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 : -300

Tolerance : +- 0.50 Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.05Tolerance mm : +- 0.05

		+ guide sleeve
Del. quantity		+ travel mm : 13.50
cm3/1000 strokes	: 344.0	+ Tolerance mm : + 0.50
Tolerance		†
cm3/1000 strokes	: <del></del> 1.0	GUIDE SLEEVE POSITION
CIID/ 1000 3CT ORES	1.0	T GOIDE SELEVE POSITION
Check tolerance		Rated speed rpm : 1121
cm3/1000s.	: <b>←</b> 5.0	+
		+ Rack travel in mm : 13.30
Spreed		+ Tolerance mm : + 1.30
Tolerance		†
cm3/1000 strokes	. 80	FULL LOAD DELIVERY AT FULL LOAD STOP
511137 1000 3 E	. 0.0	+ TOLE COND DECIVERY AT TOLE COND STOP
Check tolerance		Rated speed rpm : 980
cm3/1000s.	: 13.0	+ Aneroid pressure
		+ hPa : 1500
		Del. quantity
Datad speed non-	. 275	+ cm3/1000 strokes : 344.0
Rated speed rpm	: 2/5	+ Tolerance + cim3/1000 strokes : + 1.0
Rack travel in mm	: 4.20	Check tolerance
Tolerance mm	: + 0.10	+ cm3/1000s. : + 5.0
Del. quantity		Spreed
cm3/1000 strokes	: 14.5	Tolerance
Tolerance		+ cm3/1000 strokes : 8.0
cm3/1000 strokes	: <b>←</b> 3.0	+ Check tolerance
Check tolerance	: <del>+</del> 6.0	+ cm3/1000s. : 13.0
cm3/1000s. Spr <del>ee</del> d	: <del>+</del> 6.0	İ
Tolerance		I
cm3/1000 strokes	: 6.0	CONTROL LEVER
Check tolerance		+
cm3/1000s.	: 12.0	+ control lever
		+ position degree : 118.0
<b>(2)</b>		+ tolerance degree : +- 4.Ū
(B) SETTING OF INJ	ECTION PUMP	T SATES ADECS
WITH GOVERNOR		+ RATED SPEED + rack travel mm : 13.05
		+ rack travel mm : 13.05 + Rated speed rpm : 1045
GUIDE SLEEVE TRAVE	L	Tolerance 1/min : + 5
		+ Check
Rated speed rpm	: 1058	+ speed 1/min : +- 10
guide sleeve		+
travel mm	: 9.97	+ rack travel mm : 4.00
Tolerance mm	: <del>+-</del> 0.15	+ Rated speed rpm : 1140
Rated speed rpm	: 275	+ Tolerance 1/min : + 15 + Check
guide sleeve	. 217	+ speed 1/min : +- 20
travel mm	: 2.04	-
Tolerance mm	: + 0.20	rack travel mm : 0.70
		+ Tolerance mm : +- 0.70
Rated speed rpm	: 399	+ Rated speed rpm : 1275
guide sleeve	7 /5	†
travel mm	: 3.65	†
Tolerance mm	: <del>-</del> 0.25	<u></u>
Rated speed rpm	: 1260	LOW IDLE
nated speed 1 pm	. 1200	LOW TACK

control lever position degree tolerance degree	: 73.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 6.70
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 4.20 : +- 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 980 : 14.05 : +- 0.05
Rated speed rpm rack travel mm Tolerance num	: 800 : 14.05 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.80 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.40 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.80 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.45 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 980 : 14.30 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 980 : 1500 : 14.05 : +- 0.05

Rated speed rpm	: 980
Pressure hPa	: -
rack travel mm	: 9.00
Tolerance mm	: + 0.10
MEASUREMENT	
Rated speed rpm	: 980
Pressure hPa	: 750
rack travel mm	: 12.80
Tolerance mm	: + 0.05
Pressure hPa	: 380
rack travel mm	: 10.30
Tolerance mm	: + 0.15

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 13.80 : + 0.05 : 361.0 : + 2.0 : + 6.0 : 10.0 : 15.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:

# LOW IDLE

Rated speed rpm :	275
Rack travel in mm :	4.20
Tolerance mm : +-	0.10
Del. quantity	
cm3/1000 strokes :	14.5
Tolerance	
cm3/1000 strokes : +-	3.0
Check tolerance	
cm3/1000s. : +-	6.0
Spreed	
Tolerance	
cm3/1000 strokes :	6.0
Check tolerance	0.0
cm3/1000s. :	12.0
· · · · · · · · · · · · · · · · · · ·	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.05.98 Test oil : ISO 4113

Combination No. : 0 403 476 146

Injection pump

Pump designation : PES6MW100/320RS1245

EP type number : 0 413 406 247

Governor

Governer design. : RSV300...1100MW0A400

Governer no. : 0 420 085 293

Cust. part No. : 11032700 P02 v.02.98

Customer-spec. information

Customer : VCE

Motor : TD 63KDE Power KW : 90.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

assembly : 0 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.90 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.40

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 106.0

	1	Dal minutáti.
Tolerance cm3/1000 strokes	: + 1.0	Del. quantity cm3/1000 strokes : 106.0 Tolerance
Check tolerance cm3/1000s.	: + 3.0	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0</pre>
Spreed		Spreed Tolerance
Talanana	†	cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes	: 3.5	cm3/1000s. : 6.0
Check tolerance cm3/1000S.	: 6.0	CONTROL LEVER
	†	control lever
Rated speed rpm	: 315	position degree : 81.0 tolerance degree : +- 4.0
Rack travel in mm		DATES ORFES
Tolerance mm Del. quantity	: ← 0.10 ±	RATED SPEED : 11.30
cm3/1000 strokes	: 17.0	Rated speed rpm : 1140
Tolerance	+	Tolerance 1/min : +- 5
cm3/1000 strokes	: + 2.0 +	
Check tolerance cm3/1000s.	: ← 4.5	rack travel mm : 4.00 Rated speed rpm : 1260
Spreed	· · · · · · · · · · · · · · · · · · ·	Rated speed rpm : 1260 Tolerance i/min : +- 15
Tolerance cm3/1000 strokes	: 3.5	rack travel mm : 1.00
Check tolerance	. 3.3	Tolerance mm : +- 0.70
cm3/1000s.	: 5.5	Rated speed rpm : 1420
	1	rack travel mm : 4.00
(B) SETTING OF IN	JECTION PUMP	Rated speed rpm : 1270
WITH GOVERNOR	‡	Tolerance 1/min : +- 15
CHIEF OF FOUR DOOR	TTON	
GUIDE SLEEVE POSI		LOW IDLE
control lever	+	
position degree	: - 3	control lever
Rated speed rpm	: 800	position degree : 106.0 tolerance degree : +- 4.0
Rack travel in mm Tolerance mm	: 0.65 : + 0.35	Setting point w/out bumper spring
governor spring	1	Rated speed rpm : 315
pre-tension	+	rack travel mm : 5.00
click setting x	: 5.00	Tolerance mm : +- 0.10
FULL LOAD DELTVER	Y AT FULL LOAD STOP	Rated speed rpm : 100
	+	CRT mm min. : > 19.50
Rated speed rpm Aneroid pressure	: 1100	Testing:
hPa	: 1500	Rated speed rpm : 315

rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min	: ← 0.10 : 2.00 : 580	Aneroid pressure  hPa : 1500  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 121.0  Tolerance  cm3/1000 strokes : + 1.5  Check tolerance
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 12.40	cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Rated speed rpm rack travel mm Tolerance mm	: 13.50	Check tolerance cm3/1000S. : 7.0
Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.70 : + 0.20	rack travel mm : 12.70 Tolerance mm : +- 0.20
Rated speed rpm rack travel mm Tolerance mm	: 740 : 13.20	Aneroid pressure  hPa : - Rated speed rpm : 500  bel. quantity cm3/1000 strokes : 73.0  Tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0
SETTING		Ŧ
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1500 : 13. <i>5</i> 0	STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -	Tolerance mm : +- 1.00  Del. quantity  cm3/1000 strokes : 100.0  Tolerance  cm3/1000 strokes : +- 5.0  Check tolerance
MEASUREMENT		cm3/1000s. : +- 8.0
Rated speed rpm	: 500	1
Pressure hPa rack travel mm Tolerance mm	: 620 : 2.20 : + 0.20	LOW IDLE  Rated speed rpm : 315
Pressure hPa rack travel mm Tolerance mm	: 120 : 0.25 : ← 0.05	Rack travel in mm: 5.50 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 17.0
FUEL DELIVERY CHA	ARACTERISTICS	Tolerance - cm3/1000 strokes : +- 2.0 - Check tolerance - cm3/1000s. : +- 4.5 - Spreed

Tolerance

cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 26.06.98 : ISO 4113

Combination No. : 0 400 463 115

Injection pump

Pump designation : PES3A80D320/3RS1299 EP type number : 0 410 483 015

Governor

Governer design. : RSV325...1500A2C505R

Governer no. : 0 420 233 187

Cust. part No. :

Customer-spec. information Customer : MWM Motor : D226-3

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

teme. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.25 Tolerance mm : +- 0.05 Check

tolerance mm : + - 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

: 1- 2- 3 Firing order

Phasing : 0-120-240 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1480

Rack travel in mm : 9.00 Tolerance mm : **←** 0.05

Del. quantity

cm3/1000 strokes : 48.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : **←** 2.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

B09

Charle And an area	
Check tolerance + cm3/1000S. : 4.0	CONTROL LEVER
Tins/10003 4.0	CONTROL LEVER
	control lever
<u> </u>	position degree : 108.0
Rated speed rpm : 325	tolerance degree : +- 4.0
1	
Rack travel in mm: 7.50	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 8.00
Del. quantity	Rated speed rpm : 1525
cm3/1000 strokes : 12.0	Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : + 3.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : +- 4.5	Rated speed rpm : 1560 Tolerance 1/min : +- 15
Spreed + 4.5	Tolerance 1/min : +- 15
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 2.0	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1720
cm3/1000s. : 3.5	, , , , , , , , , , , , , , , , , , , ,
4	rack travel mm : 4.00
<del> </del>	Rated speed rpm : 1570
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : +- 15
WITH GOVERNOR +	•
+	•
†	•
CUTAF OLEGUE DOCTITAN	LOUITALE
GUIDE SLEEVE POSITION +	LOW IDLE
T	
control lever	control lever
control lever	control lever
position degree : -3	position degree : 72.0
position degree : -3	position degree : 72.0
position degree : -3 Rated speed rpm : 800	position degree : 72.0 tolerance degree : + 4.0
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : -	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 385
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 385
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 485 Tolerance 1/min : + 30
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 485 Tolerance 1/min : + 30
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 485 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1480
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1480 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 48.5 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.0 Spreed Tolerance cm3/1000 strokes : 2.5	position degree : 72.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 7.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 485 Tolerance 1/min : + 30

Start interlock

100 Rated speed rpm :>

Check

speed 1/min : > 80

# STARTING FUEL DELIVERY

Rated speed rpm : 100 20.25 rack travel mm : + 0.75Tolerance mm

Del. quantity

cm3/1000 strokes : 93.5

Tolerance

cm3/1000 strokes : +- 8.0

Check tolerance

: + 11.0 cm3/1000s.

#### LOW IDLE

Rated speed rpm : 325

7.50 Rack travel in mm : : **←** 0.10 Tolerance mm Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. 3.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.06.98 : ISO 4113

Combination No. : 0 400 866 227

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C870L

Governer no. : 0 420 232 625

Cust. part No. : 0423 1964 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF6L 913

Power KW

: 118.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Toterance

: +- 0.50

Check

tolerance °NW

: +- 0.75

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 82.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 3.0

Spreed +	- Tolerance
	- cm3/1000 strokes : 3.5
Tolerance	- Check tolerance
cm3/1000 strokes : 3.5	- cm3/1000s. : 8.0
	-
Check tolerance	-
cm3/1000s. : 8.0	AOUTROL LEURO
	- CONTROL LEVER
I	- - control lever
Rated speed rpm : 325	- position degree : 103.0
Autou Spood (pin 1 Sas	- tolerance degree : + 4.0
Rack travel in mm: 9.60	•
Tolerance mm : $\leftarrow$ 0.10	- RATED SPEED
Del. quantity	rack travel mm : 12.00 Rated speed rpm : 1295
cm3/1000 strokes : 14.5	- Rated speed rpm : 1295 _
Tolerance	- Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 + Check tolerance	, and the column / 00
cm3/1000s. : +- 4.5	- rack travel mm : 4.00 - Rated speed rpm : 1355
Spreed	- Tolerance 1/min : +- 15
Tolerance	-
cm3/1000 strokes : 5.5	- rack travel mm : 0.85
Check tolerance	- Tolerance mm : + 0.55
cm3/1000s. : 9.0	- Rated speed rpm : 1565
+	•
(a)	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	- Rated speed rpm : 1415
WITH GOVERNOR +	- Tolerance 1/min : +- 15
Ĭ	
	• •
GUIDE SLEEVE POSITION	
GUIDE SLEEVE POSITION	- LOW IDLE
<u> </u>	- LOW IDLE
control lever	•
control lever position degree : FREE	- - control lever
control lever	- - control lever - position degree : 70.0
control lever position degree : FREE Reted speed rpm : 300	- - control lever
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50	control lever 70.0 tolerance degree : +- 4.0
control lever position degree : FREE Reted speed rpm : 300	- - control lever - position degree : 70.0
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50	control lever position degree : 70.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 70.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 70.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25	control lever position degree : 70.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing:
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing: Rated speed rpm : 325
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing: Rated speed rpm : 325
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity	control lever position degree : 70.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : +- 0.10
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5	control lever position degree : 70.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : +- 0.10  rack travel mm : 9.60 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 600
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5 Tolerance	control lever position degree : 70.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : +- 0.10
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 70.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : +- 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : +- 0.10  rack travel mm : 9.60 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 600
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 9.60 Tolerance mm : + 0.10  Rated speed rpm : 300 Rated speed rpm : 600 Tolerance 1/min : + 30
control lever position degree : FREE Reted speed rpm : 300  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 82.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 70.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 600 Tolerance 1/min : + 30

Tolerance mm :  $\leftarrow$  0.05 Rated speed ip...
rack travel mm : 74.10
: + 0.10 Rated speed rpm : 750 rack travel mm : 14.05 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm : Pressure hPa : 1000 rack travel mm : 14.10 Tolerance mm : + 0.10 1000 Rated speed rpm : 500 Pressure hPa rack travel mm : 13.50 Tolerance mm : + 0.10 MEASUREMENT Rated speed rpm : 500 250 Pressure hPa rack travel mm : 13.80 Tolerance mm: +- 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1000 hPa Rated speed rpm : 750 rack travel mm : 14.05 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : +- 4.0 Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.5

Check tolerance : +- 3.N cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm : rack travel mm : 100 20.50 Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 120.0 Tolerance cm3/1000 strokes : + 7.5 Check tolerance cm3/1000s. : +- 10.0 LOW IDLE Rated speed rpm : 325 Rack travel in mm : 9.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 14.5 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

End of test specification sheet

Tolerance

cm3/1000 strokes : + 1.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 27.06.98 : ISO 4113

Combination No. : 0 400 866 229

Injection pump

Pump designation : PES6A95D410/3RS2907

EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C873L

Governer no. : 0 420 232 628

Cust. part No. : 0423 2077 KY

Customer-spec. information

Customer : KHD-DMI

Motor

: BF6L 913

Power KW

: 118.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: **←** 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

Tolerance bar : + 1.5

: 173.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : - 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : <del>←</del> 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 82.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 8.0
Rated speed rpm	: 325
Rack travel in mm Tolerance mm	: 9.60 : + 0.10
Del. quantity cm3/1000 strokes Tolerance	: 14.5
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 5.5
Check tolerance cm3/1000s.	: 9.0
GUIDE SLEEVE POSITI control lever position degree	JECTION PUMP
WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rpm	FREE: 800
WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rum  Rack travel in mm	FREE: 800
(B) SETTING OF INL WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rpm  Rack travel in mm  Tolerance mm  governor spring pre-tension click setting x	FREE: 800
WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rpm  Rack travel in mm  Tolerance mm  governor spring pre-tension click setting x	FREE: 800 : 0.50 : +- 0.20
WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rpm  Rack travel in mm  Tolerance mm  governor spring pre-tension click setting x  FULL LOAD DELIVERY	ECTION PUMP  : FREE : 800 : 0.50 : +- 0.20 : 3.25
WITH GOVERNOR  GUIDE SLEEVE POSITI  control lever position degree Rated speed rpm  Rack travel in mm  Tolerance mm  governor spring pre-tension click setting x	FREE  : 600  : 0.50  : +- 0.20  AT FULL LOAD STOP

Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 3.5 : 8.0
CONTROL LEVER	
control lever position degree tolerance degree	: 103.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.00 : 1295 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1355 : <del>+</del> 15
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1565
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1415 : + 15
control lever	. 70.0
	: 70.0 : +- 4.0
control lever	: +- 4.0
control lever position degree tolerance degree	: +- 4.0 out bumper spring
control lever position degree tolerance degree Setting point w/c Rated speed rpm rack travel mm	: +- 4.0 out bumper spring : 325 : 9.10
control lever position degree tolerance degree Setting point w/o Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 out bumper spring : 325 : 9.10
control lever position degree tolerance degree Setting point w/c Rated speed rpm rack travel mm Tolerance mm Testing: Rated speed rpm rack travel mm	: +- 4.0  out bumper spring  : 325 : 9.10 : +- 0.10  : 325 : 9.60 : +- 0.10  : 2.00 : 600

Spreed

Tolerance

Check tolerance cm3/1000s.

cm3/1000 strokes : +- 1.0

: +- 3.0

Tolerance mm	: +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 750
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 14.10 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 13.50 : + 0.10
MEASUREMENT	•
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 250 : 13.80 : +- 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 750 : 14.05 : + 0.10 : 85.0 : + 2.0 : + 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: - : 500 : 69.5
Tolerance cm3/1000 strokes	: <del>+-</del> 1.0

Check tolerance cm3/1000s.	: +- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 20.50 : +- 1.00
cm3/1000 strokes Tolerance	: 120.0
cm3/1000 strokes Check tolerance	: +- 7.5
cm3/1000s.	: +- 10.0
LOW IDLE	
Rated speed rpm	: 325
Rack travel in mm Tolerance mm Del. quantity	: 9.60 : ← 0.10
cm3/1000 strokes Tolerance	: 14.5
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: <del>+</del> 4.5
Tolerance cm3/1000 strokes Check tolerance	: 5.5
cm3/1000s.	: 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 29.06.98 : ISO 4113

Combination No. : 0 402 076 823

Test oil

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -10

Governer no.

: 0 421 833 620

Cust. part No. : RE502438

Customer—spec. information Customer : DEERE

Motor

: 6081AF001

Power KW : 149.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

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x inside diameter: 3.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Start of delivery blocking

"NW after s.o.d. : 6.50

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

14.00

Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

			1	
Rack travel in mm Tolerance mm	: +- ′		Ī	F
Del. quantity cm3/1000 strokes	: 1	133.0	†	Ri Ai hi
Tolerance cm3/1000 strokes	: +-	1.0	+	Di CI
Check tolerance cm3/1000s.	: +-	3.0	 Ŧ	CI Ci
Spreed			 Ŧ	ci Sį
Tolerance cm3/1000 strokes	:	4.0	†	CI CI CI
Check tolerance cm3/1000s.	:	6.5	+	_
Rated speed rpm	: 4	<b>.</b> 00	 +	C
Rack travel in mm Tolerance mm		5.70 0.10	+	to
Del. quantity cm3/1000 strokes	:	26.0	+	R/
Tolerance cm3/1000 strokes	: ←	0.5	+	Ri Ti
Check tolerance cm3/1000S. Spreed	: +-	4.5	†	r: R:
Tolerance cm3/1000 strokes	:	6.0	+	To
Check tolerance cm3/1000s.	:	8.0	‡	r Te R
(B) SETTING OF INJ	ECTION	) PUMP	†	r
WITH GOVERNOR		• • • • •	+	R
GUIDE SLEEVE POSIT	ION		 +	_
control lever position degree	: -3	200	+++++++++++++++++++++++++++++++++++++++	L
		800	‡	po
Rack travel in mm Tolerance mm	: : +-	0.50 0.20	-	to Se
governor spring pre-tension			1	R
click setting x	:	4.50	Ŧ	ra Te

FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm	: 1100
Aneroid pressure	400
hPa Del. quantity	: 900
cm3/1000 strokes	: 133.0
Tolerance	
cm3/1000 strokes	: <del></del> 1.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed	3.0
Tolerance	
cm3/1000 strokes	4.0
Check tolerance cm3/1000s.	: 6.5
CIIIS7 10000.	. 0.3
<del></del>	
CONTROL LEVER	
control lever	
position degree	: 97.0
tolerance degree	: +- 4.0
RATED SPEED	
rack travel mm	: 10.50
Rated speed rpm	: 1160
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1215 _
Tolerance 1/min	: <del>+-</del> 5
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1350
rack travel mm	: 4.00
Rated speed rpm	: 1225
Tolerance 1/min	: +- 15
IOU TNE	
LOW IDLE	
aankuul la	
control lever position degree	: 74.0
tolerance degree	
	· · <del>-</del>

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm	: 100	+ Aneroid pressure
CRT mm min.	: > 19.00	+ hPa : 900 + Rated speed rpm : 700
Testing:		+ Del. quantity + cm3/1000 strokes : 148.5
Rated speed rpm	: 400	<pre>+ Tolerance + cm3/1000 strokes : +- 2.0</pre>
rack travel mm Tolerance mm	: 5.70	+ Check tolerance + cm3/1000s. : +- 4.0
TORQUE CONTROL Rated speed rpm	. 4400	Aneroid pressure
rack travel mm	: 11.55	Rated speed rpm : 500
Tolerance mm	: <b>←</b> 0.05	Del. quantity cm3/1000 strckes : 94.5
Rated speed rpm rack travel mm	: 700	Tolerance
rack travel mm Tolerance mm	: 11.90 : + 0.10	cm3/1000 strokes : +- 2.0 check tolerance
roter di ice min	. 1- 0.10	cm3/1000s. : + 4.0
ANEROID/ALTITUDE		_ ‡
COMPENSATOR TEST		STARTING FUEL DELIVERY
		+
SETTING		+ Rated speed rpm : 100 + rack travel mm : 21.00
Rated speed rpm		Tolerance mm : + 0.50
Pressure hPa	: 900	+ Del. quantity + cm3/1000 strokes : 105.0
Rated speed rpm	: 500	+ Tolerance
Pressure hPa	: -	+ cm3/1000 strokes : + 20.0
rack travel mm Tolerance mm	· · · · · · · · · · · · · · · · · · ·	+ Check tolerance + cm3/1000s. : + 25.0
MEASUREMENT		‡
Rated speed rpm	: 500	
		LOW IDLE
Pressure hPa rack travel mm	: 575 : 11.20	+ Rated speed rpm : 400
Tolerance mm		+
Pressure hPa	: 360	+ Rack travel in mm: 5.70 + Tolerance mm: + 0.10
rack travel mm	: 10.40	+ Del. quantity
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : 26.0 + Tolerance
Ohant thank I		- + cm3/1000 strokes : + 2.0
Start interlock		+ Check tolerance + cm3/1000s. : +- 4.5
Rated speed rpm	: > 100	Spreed
Check		Tolerance cm3/1000 strokes : 6.0
speed 1/min	: > 80	+ Check tolerance
		+ cm3/1000s. : 8.0
FUEL DELIVERY CHA	ARACTERISTICS	+

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.06.98 Test oil : ISO 4113

Combination No. : 0 402 076 824

Injection pump

Pump designation : PES6P12DA72DRS3352 EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -11

Governer no. : 0 421 833 621

Cust. part No. : RE502439

Customer—spec. information Customer : DEERE Motor : 6081AF001 Power KW : 149.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

tolerance ma

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : +- 0.05
Check

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: +- 0.10

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 6.50Tolerance :  $\leftarrow 0.50$ 

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00 Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

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		1	
Rack travel in mm Tolerance mm	: 11.55 : + 0.05	<u> </u>	FULL LO
Del. quantity cm3/1000 strokes	: 133.0	<u> </u>	Rated s Aneroid hPa
Tolerance cm3/1000 strokes	: + 1.0	<u>†</u>	Del. qu cm3/100 Toleran
Check tolerance cm3/1000s.	: + 3.0	-	cm3/100 Check t cm3/100
Spreed		Ŧ	Spreed
Tolerance cm3/1000 strokes	: 4.0	† † +	Toleran cm3/100 Check t cm3/100
Check tolerance cm3/1000s.	: 6.5	+	
	ويتناه ويسته والمتاه والمتاه والمتاه المتاه المتاه المتاه والمتاه والمتاه والمتاه والمتاه والمتاه والمتاه	Ŧ	CONTROL
Rated speed rpm	: 400	Ī	controi
Rack travel in mm Tolerance mm	: 5.70 : + 0.10	Ţ	toleran
Del. quantity cm3/1000 strokes	: 26.0	+	RATED S
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0	<u> </u>	Rated s Toleran
cm3/1000s. Spreed	: +- 4.5	+	rack tr Rated s
	: 6.0	+	Toleran
Check tolerance cm3/1000s.	: 8.0	† +	rack tr Toleran Rated s
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	+	rack tr Rated s Toleran
GUIDE SLEEVE POSIT	ION	+	
control lever position degree	: - 3	+	LOW IDL
Rated speed rpm	: 800	+	control positio
Rack travel in mm Tolerance mm	: 0.50 : + 0.20	+	toleran
governor spring		+	Setting
pre-tension click setting x	: 4.50	Ī	Rated s rack tr

FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1100 : 900 : 133.0 : ← 1.0 : ← 3.0 : 4.0 : 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 97.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10.50 : 1160 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1215 : +- 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1350
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1225 : +- 15

# LE

l lever on degree : 74.0 nce degree : + 4.0

g point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 5.20 Tolerance mm : + 0.10

Rated speed rpm	: 100	†	Aneroid pressure	
CRT mm min.	: > 19.00	Ŧ	Rated speed rpm Del. quantity	:
Testing:		Ī	cm3/1000 strokes Tolerance	:
Rated speed rpm	: 400	1	cm3/1000 strokes	: +-
rack travel mm	: 5.70	+	Check tolerance	
Tolerance mm	: + 0.10	‡	cm3/1000s.	: +-
TORQUE CONTROL	***	+	Aneroid pressure	
Rated speed rpm rack travel mm	: 1700	†	hPa	:
Toterance mm	: 11.55 • <del>1-</del> 0.05	Ī	Rated speed rpm Del. quantity	•
rocci arios inin	0.05	1	cm3/1000 strckes	:
Rated speed rpm	: 700	+	Tolerance	
rack travel mm		†	cm3/1000 strokes	: +-
Tolerance mm	: <b>+</b> 0.10	İ	Check tolerance cm3/1000s.	
		I	Chi37 10003.	
ANEROID/ALTITUDE COMPENSATOR TEST		1		
		1	STARTING FUEL DEL	IVERY
SETTING		1	Rated speed rpm	:
		+	rack travel nam	:
Rated speed rpm		†	Tolerance mm	: +-
Pressure hPa	: 900	†	Del. quantity cm3/1000 strokes	
Rated speed rpm	: 500	I	Tolerance	•
Pressure hPa	: -	1	cm3/1000 strckes	: +-
rack travel mm	: 9.50	+	Check tolerance	
Tolerance mm	: + 0.20	1	cm3/1000s.	: +-
MEASUREMENT		1		
Rated speed rpm	: 500	+		
Pressure hPa	: 575	1	LOW IDLE	
rack travel mm	11.20	1	Rated speed rpm	:
Tolerance mm	: <b>+</b> 0.20	+	•	
On a service to the	7/0	. †	Rack travel in mm	:
Pressure hPa rack travel mm	: 360 : 10.40	†	Tolerance mm Del. quantity	: +-
Tolerance mm	: + 0.05	Ī	cm3/1000 strokes	•
Office likil	. 1 0.05	Ī	Tolerance	•
		<del></del> +	cm3/1000 strokes	: +-
Start interlock		+	Check tolerance	
Dated speed now	: > 100	†	cm3/1000s.	: +-
Rated speed rpm	100	I	Spreed Tolerance	
Check		1	cm3/1000 strokes	:
speed 1/min	: > 80	+	Check tolerance	
		+	cm3/1000s.	:
FILE DELTIVEDY CUI	DACTEDISTICS	+		
FUEL DELIVERY CHA	INACTERT21102	Ī		

900 700

148.5

2.0

4.0

500

94.5

2.0

4.0

100 21.00 0.50

105.0

20.0

25.0

400

5.70 0.10

26.0

2.0

4.5

6.0

8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.07.98

Combination No. : 0 402 046 791

Injection pump

Pump designation : PES6P120A320RS3139

EP type number : 0 412 026 718

Governor

Governer design. : RQV275...950PA728-4

Governer no. : 0 421 813 678

Cust. part No. :

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 063540 H : 264.0

Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x length mm : 600

3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

"NW after s.o.d. : 9.00

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

: 10.50 travel

Tolerance mm : + 0.50

CRT ZERO POSITION

Rack travel in mm: 13.35 Tolerance mm: + 0.05	Rated speed rpm : 800 guide sleeve travel mm : 5.80 Tolerance mm : +- 0.20
BASIC SETTING	Total de Ireil . F U.20
Rated speed rpm : 600	Rated speed rpm : 450 guide sleeve travel mm : 3.50
Del. quantity cm3/1000 strokes : 213.0	Tolerance mm : + 0.20  Rated speed rpm : 1500
Tolerance cm3/1000 strokes : +- 1.0	guide sleeve travel mm : 11.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	GUIDE SLEEVE POSITION
Spreed	GOIDE SCEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1125
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm : 275	CONTROL LEVER
Rack travel in mm: -7.50 + Tolerance mm: + 0.10 +	control lever
Del. quantity	position degree : 122.0
cm3/1000 strokes : 26.0	tolerance degree : +- 4.0
cm3/1000 strokes : +- 2.0	RATED SPEED
Check tolerance	rack travel mm : -1.00
cm3/1000s. : +- 5.0 +- 5.0	Rated speed rpm : 1020 Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : 8.0 + Check tolerance	rack travel mm : -9.30 Rated speed rpm : 1175
cm3/1000s. : 12.0	Tolerance 1/min : + 15
†	rack travel mm : -12.85
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : -12.85 Tolerance mm : +- 0.55 Rated speed rpm : 1250
GUIDE SLEEVE TRAVEL	
+	
Rated speed rpm : 950 + guide sleeve +	LOW IDLE
travel mm : 6.80 +	
Tolerance mm : + 0.10	control lever position degree : 69.0
Rated speed rpm : 275 guide sleeve	tolerance degree : +- 4.0
travel mm : 1.50	Setting point w/out bumper spring
Tolerance mm : + 0.10 +	

Rated speed rpm	: 200	†
CRT mm min.	: < -5.70	‡
Testing:		‡
reseng.		+
Rated speed rpm	: 275	+
rack travel mm Tolerance mm	: -7.50	†
loterance mm	: +- 0.10	‡
Rated speed rpm	: 350	+
		†
TORQUE CONTROL		†
Rated speed rpm	: 600	+
		÷
Rated speed rpm Tolerance mm	: 950	†
roterance min	: +- 0.10	‡
		. 🗼
ANEROID/ALTITUDE		+
COMPENSATOR TEST		†
		Ţ
SETTING		+
Rated encod one	. 500	‡
Rated speed rpm Pressure hPa	: 1000	1
		+
Rated speed rpm Pressure hPa	: 500	+
		†
rack travel mm Tolerance mm	: -4.00 · -4.00	‡
TOCCT GITTE TIME	0.20	+
MEASUREMENT		+
Rated speed rpm	: 500	Ī
,		+
	: 660	†
rack travel mm Tolerance mm	: -1.00 : +- 0.10	†
roter direct min	. +- 0.10	Į
Pressure hPa	: 200	+
rack travel mm	: -3.35	+
Tolerance mm	: +- 0.05	‡
		. [
Start interlock		+
		+
Rated speed rpm	: > 100	+ .
Rated speed rpm	: < 195	‡
		Ī
Check		I I
Check speed 1/min	; > 80	+
speed 1/min Check		+
speed 1/min	: > 80 : < 215	† † †

Aneroid pressure hPa	: 100	
Rated speed rpm Del. quantity		50
cm3/1000 strokes Tolerance		13.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
Aneroid pressure		_
Rated speed rpm Del. quantity	: 50	00
cm3/1000 strokes Tolerance	: 1	19.0
cm3/1000 strokes Check tolerance	: +-	1.0
cm3/1000s.	: +-	4.0
STARTING FUEL DELI	IVERY	<del></del>
		00
Del. quantity cm3/1000 strokes		65.0
Tolerance cm3/1000 strokes	· · · · ·	
Check tolerance cm3/1000s.		19.0
CIID7 10003.	, 1-	17.0
LOW ICLE		·····
Rated speed rpm	: 2	75
Rack travel in mm Tolerance mm Del. quantity	: (	7.50 0.10
cm3/1000 strokes Tolerance	: :	26.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s. Spreed	: +-	5.0
Tolerance		8.0
cm3/1000 strokes Check tolerance	:	0.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26.06.98 Edition Test oil : ISO 4113

Combination No. : 0 402 046 882

Injection pump

Pump designation : PES6P110A320RS3329

EP type number : 0 412 016 743

Governor

Governer design. : RQV325...1250PA1385

Governer no. : 0 421 814 209

Cust. part No. : 1351707

Customer-spec. information Customer : DAF

: NS177M-CBP Motor

Power KW : 177.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 140
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.80 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180

: - 240- 300

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.70

Start of delivery mark

Tolerance : **←** 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

		1
Rack travel in mm		Rated speed rpm : 520
Tolerance mm	: +- 0.05	+ guide sleeve
Del. quantity cm3/1000 strokes	: 154.5	travel mm : 3.02 Tolerance mm : + 0.25
Tolerance	. 137.3	Rated speed rpm : 1510 guide sleeve
cm3/1000 strokes	: <b>←</b> 1.0	travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s.	: +- 4.0	‡ <del></del>
Spreed		+ GUIDE SLEEVE POSITION
Tolerance		control lever
cm3/1000 strokes	: 5.0	position degree : - 1 Rated speed rpm : 1360
Check tolerance		+
cm3/1000s.	: 9.0 	Fack travel in mm : 11.80 Tolerance mm : +- 1.30
Rated speed rpm	: 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 4.40	Rated speed rpm : 1000
Tolerance mm	: <b>←</b> 0.10	- Aneroid pressure
Del. quantity		+ hPa : 1500
cm3/1000 strokes	: 26.0	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 154.5
cm3/1000 strokes	: +- 3.0	+ Tolerance
Check tolerance	: <del>←</del> 6.0	+ cm3/1000 strokes : +- 1.0
um3/1000\$. Spr <del>ee</del> d	: 4- 6.0	+ Check tolerance + cm3/1000s. : +- 4.0
Tolerance		+ Spreed
cm3/1000 strokes	: 8.0	Tolerance
Check tolerance	. 0.0	+ cm3/1000 strokes : 5.0
cm3/1000s.	: 12.0	+ Check tolerance
		- cm3/1000s. : 9.0
(B) SETTING OF IN	JECTION PUMP	‡
WITH GOVERNOR		
		+ CONTROL LEVER
GUIDE SLEEVE TRAV	EL	t control lever
		position degree : 123.0
Rated speed rpm guide sleeve	: 1303	tolerance degree : +- 4.0
travel mm	: 10.33	RATED SPEED
Tolerance mm	: <b>←</b> 0.15	rack travel mm : 11.80
	705	Rated speed rpm : 1290
Rated speed rpm	: 325	+ Tolerance 1/min : +- 5
guide sleeve travel mm	: 1.25	+ Check + speed 1/min : +- 10
Tolerance mm	: + 0.20	7 Speed 1/111111 . 75 10
		rack travel mm : 4.00
Rated speed rpm	: 865	Rated speed rpm : 1375
guide sleeve		Tolerance 1/min : +- 15
travel mm	: 5.43	+ Check
Tolerance mm	: +- 0.25	+ speed 1/min : +- 20

C03

rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1500

LOW IDLE

control lever

position degree : 77.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325 rack travel mm : 4.40 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.80 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.80
Tolerance mm : + 0.10

Rated speed rpm : 600
Pressure hPa : rack travel mm : 7.10
Tolerance mm : +- 0.20

**MEASUREMENT** 

Rated speed rpm : 600

Pressure hPa : 210 rack travel mm : 8.60 Tolerance mm : + 0.10

Pressure hPa : 410 rack travel mm : 11.40 Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 1000 Del. quantity

cm3/1000 strokes : 93.0

Tolerance

cm3/1000 strokes : + 1.0 Check tolerance

cm3/1000s. : +- 4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 4.40
Tolerance mm: + 0.10
Del. quantity
cm3/1000 strokes: 26.0
Tolerance
cm3/1000 strokes: + 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 30.06.98 : ISO 4113

Combination No. : 0 402 074 700

Injection pump

Pump designation : PES4P110B720RS3383

EP type number : 0 412 014 701

Governor

Governer design. : RSV300...1100P1A667

Governer no. : 0 421 833 582

Cust. part No. : 9882855

Customer spec. information

Customer : LIEBHERR

Motor : D 924 TI-E A2 Power KW : 137.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 207.0 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 3.20 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : <del>←</del> 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance "NW :  $\leftarrow$  0.75

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 12.10

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 173.0	Aneroid pressure hPa : 1220 Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 173.0 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.5
Spreed	Spreed Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 105.0
Rack travel in mm: 4.35	tolerance degree : +- 4.0
Tolerance mm : +- 0.10 + Del. quantity +	RATED SPEED
cm3/1000 strokes : 27.0 + Tolerance	rack travel mm : 4.00 Rated speed rpm : 1080
cm3/1000 strokes : + 3.0 +	Tolerance 1/min : +- 15
Check tolerance + 5.5 + Spreed + 5.5	ASSEMBLY GOVERNOR SETTING
Tolerance	Rated speed rpm : 1028
cm3/1000 strokes : 4.5 + Check tolerance	rack travel mm : 11.10
cm3/1000s. : 7.5	Rated speed rpm : 1083 Tolerance 1/min : +- 4
(B) SETTING OF INJECTION PUMP +	rack travel mm : 4.00
+	Rated speed rpm : 1029 rack travel mm : 11.10
GUIDE SLEEVE POSITION	Rated speed rpm : 1084 Tolerance 1/min : +- 4
+	rack travel mm : 4.00
control lever position degree : - 3	
Rated speed rpm : 800	Rated speed rpm : 1030 rack travel mm : 11.10
Rack travel in mm: 0.50	rack travet (mm) : 11.10
Tolerance mm : + 0.20	Rated speed rpm : 1085 Tolerance 1/min : +- 4
governor spring	rack travel mm : 4.00
pre-tension the click setting x : 5.00	
The section section is a section section.	Rated speed rpm : 1031 rack travel mm : 11.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 11.10
+	Rated speed rpm : 1086
Rated speed rpm : 980	Tolerance 1/min : +- 4 rack travel mm : 4.00

	+ SETTING
Rated speed rpm : 1032 rack travel mm : 11.10	Rated speed rpm : 500 Pressure hPa : 1220 rack travel mm : 12.10
Rated speed rpm : 1087 Tolerance 1/min : +- 4	Tolerance mm : +- 0.10
rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.90
Rated speed rpm : 1033 rack travel mm : 11.10	Tolerance mm : +- 0.10
Rated speed rpm : 1088	MEASUREMENT
Tolerance 1/min : + 4 rack travel mm : 4.00	Rated speed rpm : 500
	Pressure hPa : 730 rack travel mm : 11.80
LOW IDLE	Tolerance mm : +- 0.05
control lever position degree : 78.0 tolerance degree : +- 4.0	Pressure hPa : 670 rack travel mm : 11.30 Tolerance mm : + 0.10
Setting point w/out bumper spring	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 400	+
rack travel mm : 3.85 Tolerance mm : + 0.10	Aneroid pressure
Testing:	hPa : 1220 Rated speed rpm : 500
-	+ Del. quantity
Rated speed rpm : 400 rack travel mm : 4.35	+ Tolerance
rack travel mm : 4.35 Tolerance mm : + 0.10	+ cm3/1000 strokes : + 3.0 + Check tolerance
rack travel mm : 2.00 Rated speed rpm : 495	+ cm3/1000s. : + 6.0
Tolerance 1/min : + 50	
	+ Aneroid pressure + hPa : 1220
TORQUE CONTROL	+ Rated speed rpm : 700
Rated speed rpm : 980	rack travel mm : 12.10
rack travel mm : 12.10 Tolerance mm : +- 0.05	+ Tolerance mm : + 0.10 + Del. quantity
	cm3/1000 strokes : 186.5
rack travel mm : 12.10	+ cm3/1000 strokes : + 3.0
Tolerance mm : +- 0.10	+ Check tolerance + cm3/1000S. : + 6.0
Rated speed rpm : 700 rack travel mm : 12.10	+ 0.0
rack travel mm : 12.10 Tolerance mm : + 0.10	+
Tolerance mm : ← 0.10	+ Aneroid pressure + hPa : -
	Rated speed rpm : 500
ANEROID/ALTITUDE	+ Del. quantity + cm3/1000 strokes : 170.0
COMPENSATOR TEST	+ Tolerance
	+ cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000S. :  $\leftarrow$  3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm: 4.35 : **←** 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

: <del>+-</del> 5.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

: 7.5 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 01.07.98 Test oil : ISO 4113

Combination No. : 0 402 074 7000

Injection pump

Pump designation : PES4P110B720RS3383 EP type number : 0 412 014 701

Governor

Governer design. : RSV300...1100P1A667

Governer no. : 0 421 833 582

Cust. part No. : 9882855

Customer-spec. information

Customer : LIEBHERR

Motor : D 924 TI-E A2

Power KW : 137.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 207.0 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.20 Tolerance mm : 4- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : -- 0.50

tolerance °NW : **←** 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 12.10 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 173.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

**CD9** 

	+ Check tolerance
Check tolerance	+ cm3/1000s. : +- 3.5
cm3/1000s. : +- 3.5	+ Spreed
	+ Tolerance
Spreed	
opi eed	
T. 1	+ Check tolerance
Tolerance	+ cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	+
	+
Check tolerance	
cm3/1000s. : 7.5	+ CONTROL LEVER
	+ control lever
	position degree : 105.0
Rated speed rpm : 400	
hated speed (piii : 400	tolerance degree : + 4.0
Book though the part / 75°	The Table Control
Rack travel in mm: 4.35	+ RATED SPEED
Tolerance mm : +- 0.10	<b>+</b>
Del. quantity	+ rack travel mm : 4.00
cm3/1000 strokes : 27.0	+ Rated speed rpm : 1080
Tolerance	+ Tolerance 1/min : +- 15
cm3/1000 strokes : +- 3.0	+
Check tolerance	ASSEMBLY GOVERNOR SETTING
cm3/1000s. : +- 5.5	THE SET OF SETTING
Spreed	Pated speed ppm : 1039
Tolerance	+ Rated speed rpm : 1028
	† rack travel mm : 11.10
	T
Check tolerance	+ Rated speed rpm : 1083
cm3/1000s. : 7.5	+ Tolerance 1/min : + 4
	+ rack travel mm : 4,00
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+ Rated speed rpm : 1029
	+ rack travel mm : 11.10
	1 45% 614466 11811 . 71.10
	Rated speed rpm : 1084
GUIDE SLEEVE POSITION	
GOIDE STEENE LOSTITON	
	† rack travel mm : 4.00
	†
control lever	<b>†</b>
position degree : - 3	+ Rated speed rpm : 1030
Rated speed rpm : 800	+ rack travel mm : 11.10
	+
Rack travel in mm : 0.50	+ Rated speed rpm : 1085
Tolerance mm : + 0.20	+ Tolerance 1/min : +- 4
	rack travel mm : 4.00
governor spring	1 4.00
pre-tension	
	T Paked and a second and
click setting $x : 5.00$	Rated speed rpm : 1031
	+ rack travel mm : 11.10
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 1086
	+ Tolerance 1/min : +- 4
Rated speed rpm : 980	+ rack travel mm : 4.00
Aneroid pressure	1
hPa : 1220	1
Del. quantity	Rated speed rpm : 1032
cm3/1000 strokes : 173.0	
	† rack travel mm : 11.10
Tolerance	
	<b>†</b>
cm3/1000 strokes : +- 1.0	Rated speed rpm : 1087

Tolerance 1/min : +- 4 rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : -
Rated speed rpm : 1033 rack travel mm : 11.10	rack travel mm : 10.90 Tolerance mm : +- 0.10 MEASUREMENT
Rated speed rpm : 1088 Tolerance 1/min : +- 4 rack travel mm : 4.00	Rated speed rpm : 500
LOW IDLE	Pressure hPa : 730 rack travel mm : 11.80 Tolerance mm : + 0.05
control lever position degree : 78.0 tolerance degree : + 4.0	Pressure hPa : 670 rack travel mm : 11.30 Tolerance mm : + 0.10
Setting point w/out bumper spring  Rated speed rpm : 400	FUEL DELIVERY CHARACTERISTICS
rack travel mm : 3.85 Tolerance mm : + 0.10 Testing:	Aneroid pressure hPa : 1220 Rated speed rpm : 500
Rated speed rpm : 400 rack travel mm : 4.35 Tolerance mm : + 0.10	Del. quantity cm3/1000 strokes : 193.5 Tolerance cm3/1000 strokes : +- 3.0
rack travel mm : 2.00 Ruted speed rpm : 495 Tolerance 1/min : +- 50	Check tolerance cm3/1000s. : + 6.0
TORQUE CONTROL  Rated speed rpm : 980  rack travel mm : 12.10  Tolerance mm : + 0.05  Rated speed rpm : 500	Aneroid pressure hPa : 1220 Rated speed rpm : 700 rack travel mm : 12.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 186.5 Tolerance
rack travel mm : 12.10 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 12.10	cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0
rack travel mm : 12.10 Tolerance mm : + 0.10	Aneroid pressure hPa : - Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST	Del. quantity cm3/1000 strokes : 170.0 Tolerance
SETTING	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.5</pre>
Rated speed rpm : 500 Pressure hPa : 1220 rack travel mm : 12.10 Tolerance mm : + 0.10	STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

### LOW IDLE

Rated speed rpm : 400 Rack travel in mm: 4.35 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 27.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : **←** 5.5 Spreed Tolerance cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. : 7.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 26.06.98 : ISO 4113

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278K

Governer no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF

Motor Power KW : 315.0

: XF 315 M

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: **←** 2.0

Overflow valve : 1 417 413 000

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Overflow quantity min. L/h : 140 Tolerance L/h : +- 20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

C13

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

Tolerance

: -300 : +- 0.50

Check

tolerance °NW

: **←** 0.75

Start of delivery mark

Tolerance

: +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40 Tolerance mm : +- 0.05

		+ guide sleeve
Del. quantity cm3/1000 strokes	: 318.0	travel mm : 3.92 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 1310 guide sleeve travel mm : 13.50
Check tolerance cm3/1000s.	: + 4.0	+ travel mm : 13.50 - Tolerance mm : +- 0.50
Spreed		GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes	: 5.0	- control lever - position degree : - 1
Check tolerance cm3/1000s.	: 9.0	Rated speed rpm : 1158
		+ Rack travel in mm : 12.00 + Tolerance mm : +- 2.70
Rated speed rpm	. 275	Ī
Rack travel in mm		FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm	: + 0.10	T Rated speed rpm : 980
Del. quantity		Aneroid pressure
cm3/1000 strokes	: 13.5	+ hPa : 1500
Tolerance		Del. quantity
cm3/1000 strokes	: <del></del> 3.0	- cm3/1000 strokes : 318.0
Check tolerance		Tolerance
cm3/1000S.	: <del></del> 6.0	- cm3/1000 strokes : +- 1.0
Spreed		- Check tolerance
Tolerance		+ cm3/1000s. : +- 4.0
cm3/1000 strokes	: 8.0	+ Spreed
Check tolerance	. 43.0	Tolerance
cm3/1000s.	: 12.0	+ cm3/1000 strokes : 5.0 + Check tolerance
		- cm3/1000s. : 9.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	
GUIDE SLEEVE TRAV		CONTROL LEVER
	<del></del>	- control lever
Rated speed rpm	: 1077	position degree : 119.0
guide sleeve		tolerance degree : +- 4.0
travel mm	: 10.24	+
Tolerance mm	: +- 0.15	RATED SPEED
<b>D. 1</b>	275	rack travel mm : 12.40
Rated speed rpm guide sleeve	: 275	+ Rated speed rpm : 1040
travel mm	: 2.04	+ Tolerance 1/min : +- 5 + Check
Tolerance mm	: + 0.20	+ speed 1/min : +- 10
. Jeer an ice mini		- Speed 17 mm
Rated speed rpm	: 704	rack travel mm : 4.00
guide sleeve		Rated speed rpm : 1145
travel mm	: 6.53	Tolerance 1/min : +- 15
Tolerance mm	: +- 0.25	+ Check
		speed 1/min : +- 20
Rated speed rpm	: 400	rack travel mm : 0.50

Tolerance mm Rated speed rpm	: +- 0.50 : 1275
LOW IDLE	
control lever position degree tolerance degree	: 72.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.20 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 980 : 13.40 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.35 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 790 : 13.05 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.55 :   → 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.05 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	. 13.40
Rated speed rpm rack travel mm Tolerance mm	: 980 : 13.80 : +- 0.10

ANEROID/ALTITUDE	
COMPENSATOR TEST	

# SETTING

Rated speed rpm	:	980
Pressure hPa	:	1500
rack travel mm	:	13.40
Tolerance mm	: +	<b>⊢</b> 0.05
Rated speed rpm	:	980

Rated speed rpm : 980
Pressure hPa : rack travel mm : 8.55
Tolerance mm : + 0.20

# **MEASUREMENT**

Rated speed rpm	•	980
Nated Speed I pill	•	700
Pressure hPa	:	520
rack travel mm	:	12.20
Tolerance mm	: +	- 0.05
Pressure hPa	:	210
rack travel mm	:	9.80

Tolerance mm

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	
hPa	: 1500
Rated speed rom	: 750
Del. quantity	740.0
cm3/1000 strokes Tolerance	: 342.0
cm3/1000 strokes	: +- 2.0
Check tolerance	2.0
cm3/1000s.	: +- 5.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	. 42.0
CM3/10003.	: 12.0
rack travel mm	: 13.05
Tolerance mm	: <b>←</b> 0.10
Aneroid pressure	
hos	

Aneroid pressure
hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 195.0

Tolerance		
cm3/1000 strokes	: +-	1.0
Check tolerance		
cm3/1000S.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0
01	•	

# LOW IDLE

Rated speed rpm		275	
Rack travel in mm Tolerance mm	: +-	5.20 0.10	
Del. quantity cm3/1000 strokes Tolerance	•	13.5	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	6.0	
Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 26.06.98 Edition : 26.06.98 Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278

: -1K Governer no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information Customer : DAF

Motor Power KW : 280.0

: XF 280 M

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 145
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 15.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm: +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

**C17** 

Tolerance mm : + 0.05	guide steeve travel mm : 3.92
Del. quantity cm3/1000 strokes : 303.0	Tolerance mm : +- 0.25  Rated speed rpm : 1310
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1310 guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : +- 4.0	GUIDE SLEEVE POSITION
Spreed	GOIDE SCEEVE FOSTITON
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1171
Check tolerance : 9.0 +	Rack travel in mm : 10.70 Tolerance mm : +- 2.00
Rated speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 750 Aneroid pressure hPa : 1500
cin3/1000 strokes : 13.5 + Tolerance +	Del quantity cm3/1000 strokes : 303.0
cm3/1000 strokes : +- 3.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed Tolerance	cm3/1000s. : + 4.0 Spreed
cm3/1000 strokes :       8.0         Check tolerance cm3/1000s.       :	Tolerance cm3/1000 strokes : 5.0 Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : 9.0
<u> </u>	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 118.0
Rated speed rpm : 1062 + guide sleeve +	tolerance degree : +- 4.0
travel mm : 10.04 Tolerance mm : + 0.15	RATED SPEED rack travel mm : 11.35 Rated speed rpm : 1050
Rated speed rpm : 275 guide sleeve	Tolerance 1/min : + 5 Check
travel mm : 2.04 + Tolerance mm : + 0.20 +	speed 1/min : +- 10 rack travel mm : 4.00
Rated speed rpm : 697 guide sleeve	Rated speed rpm : 1150 Tolerance 1/min : +- 15
travel mm : 6.48 Tolerance mm : + 0.25	Check speed 1/min : +- 20
Rated speed rpm : 400	rack travel mm : 0.50

Tolerance mm Rated speed rpm	: +- 0.50 : 1275
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.80
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.60 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 12.35
Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.60 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.30 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.80 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.40 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 775 : 1500 : 12.65 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 775 : - : 8.50 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 775
Pressure hPa rack travel mm Tolerance mm	: 450 : 12.10 : ← 0.05
Pressure hPa rack travel mm Tolerance mm	: 170 : 9.90 : ← 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1500
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	4500
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 980
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 980 : 272.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1500 : 980 : 272.0 : +- 2.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1500 : 980 : 272.0 : + 2.0 : + 5.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 980 : 272.0 : + 2.0 : + 5.0 : 8.0 : 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 980 : 272.0 : + 2.0 : + 5.0 : 8.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 980 : 272.0 : + 2.0 : + 5.0 : 8.0 : 12.0

Check tolerance cm3/1000s. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm: 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 13.5

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.98 Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump

Pump designation: : PE6F12OA32ORS7412 EP type number: : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1300K

Governer ro. : 0 421 815 527

Cust. part No. : 1315099

Customer—spec. information Customer : DAF Motor : XF 250 M Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

tolerance mm

## BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check

Pack travel in mm · 10 50

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.10

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.85	- Rated speed rpm : 400
Tolerance mm : + 0.05	guide sleeve
	travel mm : 3.92
Del. quantity	Tolerance mm : +- 0.25
cm3/1000 strokes : 283.0	
Tolonopea	Rated speed rpm : 1310
Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50
5. 1000 3610Ke3 1.0	- Tolerance mm : +- 0.50
Check tolerance	
cm3/1000S. : +- 4.0	
	- GUIDE SLEEVE POSITION
Spr <del>ee</del> d -	
Tolerance	- control lever
cm3/1000 strokes : 5.0	position degree : - 1
	- Rated speed rpm : 1181
Check tolerance	
cm3/1000s. : 9.0 -	Rack travel in mm: 10.00
	- Tolerance mm : +- 2.00
Rated speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 5.20	- Rated speed rpm : 750
Tolerance mm : +- 0.10 Del. quantity	- Ameroid phessure - hPa : 1500
cm3/1000 strokes : 13.5	- hPa : 1500 - Del. quantity
Tolerance	- cm3/1000 strokes : 283.0
cm3/1000 strokes : +- 3.0	- Tolerance
Check tolerance	cm3/1000 strokes : $+$ 1.0
cm3/1000s. : +- 6.0	- Check tolerance
Spreed Tolerance	- cm3/1000s. : +- 4.0 - Spreed
cm3/1000 strokes : 8.0	- Tolerance
Check tolerance	- cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	- Check tolerance
+	- cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP	<u>-</u> L
WITH GOVERNOR	
	- CONTROL LEVER
	_
GUIDE SLEEVE TRAVEL	- control lever
Rated speed rpm : 1072	position degree : 118.0
guide sleeve	- tolerance degree : +- 4.0
travel mm : 10.16	- RATED SPEED
Tolerance mm : + 0.15	- rack travel mm : 10.50
Date of second control of the second control	- Rated speed rpm : 1045
Rated speed rpm : 275	- Tolerance 1/min : +- 5 - Check
guide sleeve travel mm : 2.04	- tneck - speed 1/min : + 10
Tolerance mm : +- 0.20	- Opeca (7)((() 10)
-	rack travel mm : 4.00
Rated speed rpm : 701	- Rated speed rpm : 1140
guide sleeve	- Tolerance 1/min : +- 15
travel mm : 6.52 - Tolerance mm : +- 0.25	- Check - speed 1/min : +- 20
rocer ance min , T U.23	- Specu (/mili . +- (U

rack travel mm Tolerance mm Rated speed rpm	: 0.70 : + 0.70 : 1275
LOW IDLE	
control lever position degree tolerance degree	: 70.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.89
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.20 : ← 0.10
Rated speed rpm	: 310
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 11.85 : + 0.05
Rated speed rpm rask travel mm Tolerance mm	: 980 : 11.35 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 900 : 11.50 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.75 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.80 : + 0.10

# SETTING

Rated speed rpm	: 775
Pressure hPa	: 1500
rack travel mm	: 11.85
Tolerance mm	: + 0.05
Rated speed rpm	: 775
Pressure hPa	: -
rack travel mm	: 8.30
Tolerance mm	: + 0.20
MEASUREMENT	
Rated speed rpm	: 775
Pressure hPa	: 460
rack travel mm	: 11.00
Tolerance mm	: + 0.05
Pressure hPa	: 250
rack travel mm	: 9.30
Tolerance mm	: + 0.10

# FUEL DELIVERY CHARACTERISTICS

~~~~	
Aneroid pressure hPa	: 1500
Rated speed rpm Del. quantity	: 980
cm3/1000 strokes	: 245.0
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000S. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance	: 12.0
	. 112.0
rack travel mm Tolerance mm	: 11.50 : + 0.10
rack travel mm	: 11.50
rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm	: 11.50
rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 11.50 : + 0.10
rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity	: 11.50 : + 0.10 : - 600

Rated speed rpm	:		275
Rack travel in mm Tolerance mm Del. quantity	:	+	5.20 0.10
	:		13.5
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	5.0
4	:		8.0
Check tolerance cm3/1000s.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 26.06.98 : ISO 4113

Combination No. : 0 402 646 681

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1381K

Governer no. : C 421 815 551

Cust. part No. : 1349846/0

Customer-spec. information Customer : DAF : XF 250 Motor Power KW : 250.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 15.0 Tolerance bar : ← 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Rack travel in mm : 11.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

· +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : **←** 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 11.35 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 245.0

	+ Rated speed rpm : 1282
Tolerance	+ Rated speed rpm : 1282 + guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 12.00
CIID/ 1000 SETORES	Tolerance mm : + 0.25
Check tolerance	Total alice min
cm3/1000s. : +- 4.0	Rated speed rpm : 1370
1107 (1000).	guide sleeve
Spreed	+ travel mm : 13.50
	+ Tolerance mm : + 0.50
Tolerance	1
cm3/1000 strokes : 5.0	
	+ GUIDE SLEEVE POSITION
Check tolerance	+
cm3/1000s. : 9.0	+ Rated speed rpm : 1263
	+
	+ Rack travel in mm : 10.50
	+ Tolerance mm : + 1.30
Rated speed rpm : 275	†
<b>P.</b> 00	
Rack travel in mm: 5.20	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10	
Del. quantity	Rated speed rpm : 980
cm3/1000 strokes : 13.5	Aneroid pressure
Tolerance cm3/1000 strokes : +- 3.0	+ hPa : 1500
	+ Del. quantity + cm3/1000 strokes : 245.0
Check tolerance : +- 6.0	+ cm3/1000 strokes : 245.0 + Tolerance
Spreed	+ cm3/1000 strokes : + 1.0
Tolerance	Check tolerance
cm3/1000 strokes : 8.0	cm3/1000s. : + 4.0
Check tolerance	Spreed
cm3/1000s. : 12.0	+ Tolerance
(1107 10000).	+ cm3/1000 strokes : 5.0
	+ Check tolerance
(B) SETTING OF INJECTION PUMP	+ cm3/1000s. : 9.0
WITH GOVERNOR	
W21() 0012.((10))	1
	ļ
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER
	+
Rated speed rpm : 1055	+ control lever
guide sleeve	+ position degree : 110.0
travel mm : 7.47	tolerance degree : +- 4.0
Tolerance mm : + 0.15	†
275	+ RATED SPEED
Rated speed rpm : 275	rack travel mm : 10.50
guide sleeve	+ Rated speed rpm : 1045
travel mm : 2.04	+ Tolerance 1/min : + 5
Tolerance mm : +- 0.20	† Check
Rated speed rpm : 820	+ speed 1/min : + 10
	rack travel mm : 4.00
guide sleeve travel mm : 5.14	+ Rated speed rpm : 1130
Tolerance mm : +- 0.25	+ Tolerance 1/min : +- 15
	+ Check
Rated speed rpm : 480	+ speed 1/min : + 20
guide sleeve	- Speed (7 min)
travel mm : 3.34	rack travel mm : 0.70
Tolerance mm : + 0.25	+ Tolerance mm : +- 0.70
	+ Rated speed rpm : 1275
	1 company after an element of the company

control lever

position degree : 74.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. :> 8.30

Testing:

Rated speed rpm : 275 rack travel rmm : 5.20 Tolerance mm :  $\leftarrow$  0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980 rack travel mm : 11.35 Tolerance mm : + 0.10

Rated speed rpm : 900 rack travel mm : 11.50 Tolerance mm : + 0.10

Rated speed rpm : 750 rack travel mm : 11.85 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 11.75 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 11.30 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 10.90 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 775 Pressure hPa : 1500 Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : +- 0.05

**MEASUREMENT** 

Rated speed rpm : 775

Pressure hPa : rack travel mm : 8.30
Tolerance mm : + 0.20

Pressure hPa : 250 rack travel mm : 9.30 Tolerance mm : + 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa		1	1500
Rated speed rpm	:		750
rack travel mm	:		11.85
Tolerance mm	:	+-	0.05
Del. quantity			
cm3/1000 strokes	:		233.0
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s.	:	+-	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		10.0
Check tolerance			
cm3/1000s.	:		15.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		600
Del. quantity			
cm3/1000 strokes	:		188.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0
Spreed			
Tolerance			
cm3/1000 strokes	:		10.0
Check tolerance			
cm3/1000s.	:		15.0

Rated speed rpm	:		275	
Rack travel in mm Tolerance mm Del. quantity	-	+-	5.20 0.10	
cm3/1000 strokes Tolerance	:		13.5	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:		12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.06.98 Edition Edition : 30.06.98
Test oil : ISO 4113

Combination No. : 0 402 746 650

Injection pump

Pump designation : PES6P120A320RS7344 EP type number : 0 412 726 914

Governor

Governer design. : RQ275/1050PA999-6 Governer no. : 0 421 801 785

Cust. part No. : CCEP 5151A 66-230

Customer—spec. information

Customer : RENAULT V.I.

Motor : MIDR 062045 M41

Power KW : 250.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 145 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.50
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : -0.15 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

mm and maximum rack : 11.00

Difference ° CS : 2.25

	1	
	1	- - Rated speed rpm : 275
		- guide sleeve
CRT ZERO POSITION	1	- travel mm : 0.80
	1	- Tolerance mm : +- 0.10
	1	- TOTALISE IMILITY . TO . (U
Rack travel in mm	: 11.60	- Rated speed rpm : 1050
Tolerance mm		guide sleeve
roter arice min	1 0.05	travel mm : 6.00
	T	
DACTO CETTING		- Tolerance mm : + 0.10
BASIC SETTING	7	Patral annual annual 704
	100	- Rated speed rpm : 396
Rated speed rpm	: 600	- guide sleeve
		- travel mm : 2.99
Del. quantity	+	- Tolerance rm : +- 0.10
cm3/1000 strokes	: 287.0 <del> </del>	•
	4	- Rated speed rpm : 550
Tolerance		- guide sleeve
cm3/1000 strokes	: +- 1.0	- travel mm : 6.00
	1	- Tolerance mm : +- 0.10
Check tolerance		
cm3/1000s.	: +- 4.0	- Pated speed nom : 1750
CIID/ (UUU).	4.0	- Rated speed rpm : 1350
<b>6</b>		guide sleeve
Spreed	†	- travel mm : 11.50
-	· †	- Tolerance mm : +- 0.50
Tolerance	+	•
cm3/1000 strokes	: 5.0	
		- GUIDE SLEEVE POSITION
Check tolerance		•
cm3/1000s.	: 9.0 <del>}</del>	•
	1	- control lever
		- position degree : 109
	1	- Rated speed rpm : 600
Rated speed rpm	: 275	- Nated Speed Ipin . 000
rated speed (bill	· 2/3	- Rack travel in mm : 20.00
Dook Amount in my	· _7.00	
Rack travel in mm		- Tolerance mm : +- 0.80
	: + 0.10	•
Del. quantity	†	
cm3/1000 strokes	: 37.0	<ul> <li>FULL LOAD DELIVERY AT FULL LOAD STOP</li> </ul>
Tolerance	+	•
cm3/1000 strokes	: <del>+-</del> 2.0 <del> </del>	- Rated speed rpm : 600
Check tolerance	+	- Anercid pressure
cm3/1000s.	: +- 5.0 <del>}</del>	- hPa : 1000
Spreed	· '- J.U T	- ma . 1000
	· - 3.6	
Toterance	3.0	- Del. quantity
	+	- Del. quantity - cm3/1000 strokes : 287.0
cm3/1000 strokes	+	- Del. quantity - cm3/1000 strokes : 287.0 - Tolerance
cm3/1000 strokes Check tolerance	: 8.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : + 1.0
cm3/1000 strokes Check tolerance	: 8.0	- Del. quantity - cm3/1000 strokes : 287.0 - Tolerance - cm3/1000 strokes : + 1.0 - Check tolerance
cm3/1000 strokes Check tolerance	: 8.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0 Spreed
m3/1000 strokes theck tolerance m3/1000s. (B) SETTING OF INJ	: 8.0 : 12.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0 Spreed Tolerance
m3/1000 strokes theck tolerance cm3/1000s. (B) SETTING OF INJ	: 8.0 : 12.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
m3/1000 strokes theck tolerance m3/1000s. (B) SETTING OF INJ	: 8.0 : 12.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s. (B) SETTING OF INJ	: 8.0 : 12.0	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJ VITH GOVERNOR	: 8.0 : 12.0 ECTION PUMP	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJ	: 8.0 : 12.0 ECTION PUMP	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJ WITH GOVERNOR  GUIDE SLEEVE TRAVE	: 8.0 : 12.0 ECTION PUMP	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
m3/1000 strokes theck tolerance m3/1000s.  (B) SETTING OF INJUITH GOVERNOR  GUIDE SLEEVE TRAVE	: 8.0 : 12.0 ECTION PUMP	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJ WITH GOVERNOR  SUIDE SLEEVE TRAVE Rated speed rpm guide sleeve	: 8.0 : 12.0 ECTION PUMP	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJ WITH GOVERNOR  GUIDE SLEEVE TRAVE Rated speed rpm guide sleeve travel mm Tolerance mm	: 8.0 : 12.0 ECTION PUMP :L : 1131 : 6.38	Del. quantity cm3/1000 strokes : 287.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0

,	
control lever position degree : 274.0 tolerance degree : +- 4.0  RATED SPEED	Rated speed rpm : 500 Pressure hPa : - rack travel mm : -3.75 Tolerance mm : + 0.30
rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : +- 5	MEASUREMENT Rated speed rpm : 500
rack travel mm : -7.60 + Rated speed rpm : 1240 + Tolerance 1/min : + 15	Pressure hPa : 560 rack travel mm : -1.35 Tolerance mm : + 0.15
rack travel mm : -11.10  Tolerance mm : + 0.50  Rated speed rpm : 1350	Pressure hPa : 320 rack travel mm : -2.85 Tolerance mm : +- 0.05
	Start interlock
LOW IDLE	Rated speed rpm : > 100 Rated speed rpm : < 225
control lever position degree : 251.0 tolerance degree : + 4.0	Check speed 1/min : > 80 Check speed 1/min : < 245
Setting point w/out bumper spring	Speed 17/1/111
Rated speed rpm : 200	FUEL DELIVERY CHARACTERISTICS
CRT mm min. : < -5.80	Aneroid pressure
+	
CRT mm min. : < -5.80  Testing:  Rated speed rpm : 275 rack travel mm : -7.00	Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 280.0
CRT mm min. : < -5.80  Testing:  Rated speed rpm : 275 rack travel mm : -7.00 Tolerance mm : + 0.10  rack travel mm : -9.50 Rated speed rpm : 365	Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 280.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500
CRT mm min. : < -5.80  Testing:  Rated speed rpm : 275 rack travel mm : -7.00 Tolerance mm : + 0.10  rack travel mm : -9.50 Rated speed rpm : 365 Tolerance 1/min : + 20  TORQUE CONTROL	Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 280.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 111.0 Tolerance cm3/1000 strokes : + 1.0
CRT mm min. : < -5.80  Testing:  Rated speed rpm : 275 rack travel mm : -7.00 Tolerance mm : + 0.10  rack travel mm : -9.50 Rated speed rpm : 365 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 600  Rated speed rpm : 1050	Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 280.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 111.0 Tolerance
CRT mm min. : < -5.80  Testing:  Rated speed rpm : 275 rack travel mm : -7.00 Tolerance mm : + 0.10  rack travel mm : -9.50 Rated speed rpm : 365 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 600  Rated speed rpm : 1050 Tolerance mm : + 0.10	Aneroid pressure hPa : 1000 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 280.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 111.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance

D03

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -7.09Tolerance mm : +0.10

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 simples : +- 2.0

Check tolerance

cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.07.98 : ISO 4113 Test oil

Combination No. : 0 402 746 655

Injection pump

Pump designation : PES6P120A320RS7343 EP type number : 0 412 726 915

Governor

Governer design. : RQV300...1000PA1160

: -1K

Governer no. : 0 421 815 559

Cust. part No. : 5168 66-250

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 062356 B41

Power KW : 288.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

D05

x inside diameter : 3.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.50 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : ÷- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : -0.40 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

: 11.00 travei Difference ° CS : 2.25

CRT ZERO POSITION

	+ Tolerance mm : +- 0.20
Rack travel in mm : 13.00 Tolerance mm : + 0.05	Rated speed rpm : 827 guide sleeve travel mm : 5.96
BASIC SETTING	Tolerance mm : +- 0.25
Rated speed rpm : 1000	Rated speed rpm : 550 guide sleeve
Del. quantity cm3/1000 strokes : 356.0	+ travel mm : 3.66 + Tolerance mm : + 0.25
Tolerance	Rated speed rpm : 1440 guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 13.50 + Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	
Spreed	+ GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1
Check tolerance	Rated speed rpm : 1275
cm3/1600s. : 9.0	Rack travel in mm : 12.00 Tolerance mm : + 1.30
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : -8.00	Rated speed rpm : 1000
Tolerance mm : + 0.10 Del. quantity	+ Aneroid pressure + hPa : 1200
cm3/1000 strokes : 39.0 Tolerance	+ Del. quantity + cm3/1000 strokes : 356.0
cm3/1000 strokes : +- 1.5 Check tolerance	+ Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 5.0 Spreed	Check tolerance cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes : 8.0	Spreed Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	+ Check tolerance + cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Ť
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 296.0
Rated speed rpm : 1113 guide sleeve	tolerance degree : + 4.0
travel mm : 8.82	RATED SPEED
Tolerance mm : + 0.15	+ rack travel mm : -1.00 + Rated speed rpm : 1100
Rated speed rpm : 300 guide sleeve	Tolerance 1/min : + 5
travel mm : 1.29	+ rack travel mm : -9.00

Rated speed rpm Tolerance 1/min	: 1225 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.50
LOW IDLE	
control lever position degree tolerance degree	: 252.0 : +- 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: > -7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -8.00 : +- 0.10
Rated speed rpm	: 390
TORQUE CONTROL Rated speed rpm	: 1000
Rated speed rpm rack travel mm Tolerance mm	: 600 : -0.40 : +- 0.15
Rated speed rpm rack travel mm Tolerance nm	: 800 : 0.10 : → 0.15
Rated speed rpm rack travel mm Tolerance mm	: 350 : -1.55 : + 0.30
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 1000 : 1200
Rated speed rpm Pressure hPa rack travel mm	: 500 : - : -4.20

Tolerance mm	: <del>+-</del> 0.30
MEASUREMENT	
Rated speed rpm	: 1000
Pressure hPa rack travel mm Tolerance mm	: 320 : −3.00 : +− 0.15
Pressure hPa rack travel mm Tolerance mm	: 520 : −1.90 : ← 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 240
Check speed 1/min	: > 80
Check speed 1/min	: < 250
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	
nra	: 1200
hPa Rated speed rpm Del. quantity	: 1200 : 600
Rated speed rpm Del. quantity cm3/1000 strokes	: 600
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 600
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 600 : 390.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 600 : 390.0 : ← 3.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm	: 600 : 390.0 : ← 3.0 : ← 6.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm	: 600 : 390.0 : ← 3.0 : ← 6.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 600 : 390.0 : ← 3.0 : ← 6.0 : 0.10 : + 0.15
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 600 : 390.0 : ← 3.0 : ← 6.0 : 0.10 : + 0.15
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 600 : 390.0 : ← 3.0 : ← 6.0 : 0.10 : ← 0.15 : 500 : 238.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 600 : 390.0 : + 3.0 : + 6.0 : 0.10 : + 0.15 : : 500 : 238.0 : + 1.0 : + 4.0

Tolerance mm	:	+	0.75
Del. quantity			
cm3/1000 strokes	:		185.0
Tolerance			
cm3/1000 strokes	:	+-	15.0
Check tolerance			
cm3/1000s.	:	+-	19.0

Rated speed rpm	•	300	
Rack travel in mm Tolerance mm Del. quantity	: +-	-8.00 0.10	
cm3/1000 strokes	:	<b>39</b> .0	
Tolerance cm3/1000 strokes	: +-	1.5	
Check tolerance cm3/1000S. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26.06.98 Edition Test oil : ISO 4113

Combination No. : 0 402 846 302

Injection pump

Pump designation : PE6P120A320RS8520 EP type number : 0 412 826 202

Governor

Soverner design. : RQV275...1000PA1269K

Governer no. : 0 421 815 969

Cust. part No. : 1310222/2

Customer-spec. information Customer : DAF : XF 355 M Motor

Power KW : 355.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm: 14.05 Tolerance mm : +- 0.05

009

	+	guide sleeve
Del. quantity	+	travel mm : 13.50
cm3/1000 strokes :	344.0	Tolerance mm : + 0.50
	<del></del>	
Tolerance	+	
cm3/1000 strokes : -	<b>←</b> 1.0 }	GUIDE SLEEVE POSITION
	<del> </del>	
Check tolerance	+	Rated speed rpm : 1121
cm3/1000s. : -	<b></b> 5.0 <del>}</del>	·
	+	Rack travel in mm ; 13.30
Spreed	+	Tolerance mm : +- 1.30
	+	
Tolerance	<u> </u>	
cm3/1000 strokes :	8.0 +	FULL LOAD DELIVERY AT FULL LOAD STOP
	<del></del>	
Check tolerance	17.0	Rated speed rpm : 980
cm3/1000s. :	13.0	Aneroid pressure
	<del></del> †	hPa : 1500
	†	Del. quantity cm3/1000 strokes : 344.0
Pated speed nom :	275	cm3/1000 strokes : 344.0 Tolerance
Rated speed rpm :	1	cm3/1000 strokes : +- 1.0
Rack travel in mm :	6.00	Check tolerance
	+ 0.10 I	cm3/1000s. : +- 5.0
Del. quantity	1	Spreed
cm3/1000 strokes :	14.5	Tolerance
Tolerance	1	cm3/1000 strokes : 8.0
cm3/1000 strokes :	<b>←</b> 3.0 ↓	Check tolerance
Check tolerance	1	cm3/1000s. : 13.0
	+- 6.0	. 13.0
Spreed	1	
Tolerance	1	
cm3/1000 strokes :	6.0	CONTROL LEVER
Check tolerance	+	
cm3/1000s. :	12.0	control lever
	+	position degree : 118.0
	<del>}</del>	tolerance degree : - 4.0
(B) SETTING OF INJECT	TION PUMP	•
WITH GOVERNOR	+	RATED SPEED
	+	rack travel mm : 13.05
	<del></del>	Rated speed rpm : 1045
GUIDE SLEEVE TRAVEL	+	Tolerance 1/min : i- 5
	+	Check
Rated speed rpm :	1058	speed 1/min : + 10
guide sleeve	1	
travel mm :	9.97	rack travel mm : 4.00
Tolerance mm : 4	. 045	
	<b></b> 0.15	Rated speed rpm : 1140
Datad amond and	+	Rated speed rpm : 1140 Tolerance 1/min : +- 15
Rated speed rpm :	+- 0.15 275	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check
guide sleeve	275	Rated speed rpm : 1140 Tolerance 1/min : +- 15
guide sleeve travel mm :	275	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20
guide sleeve travel mm :	275	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20 rack travel mm : 0.70
guide sleeve travel mm : Tolerance mm : H	275 2.04 ← 0.20	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.70 Tolerance mm : +- 0.70
guide sleeve travel mm : Tolerance mm : H Rated speed rpm :	275	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20 rack travel mm : 0.70
guide sleeve travel mm : Tolerance mm : H  Rated speed rpm : guide sleeve	275 2.04 0.20 399	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.70 Tolerance mm : +- 0.70
guide sleeve travel mm : Tolerance mm : d  Rated speed rpm : guide sleeve travel mm :	275 2.04 0.20 399 3.65	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.70 Tolerance mm : +- 0.70
guide sleeve travel mm : Tolerance mm : d  Rated speed rpm : guide sleeve travel mm :	275 2.04 0.20 399	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.70 Tolerance mm : +- 0.70
guide sleeve travel mm : Tolerance mm : d  Rated speed rpm : guide sleeve travel mm :	275 2.04 0.20 399 3.65	Rated speed rpm : 1140 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.70 Tolerance mm : +- 0.70

control lever position degree : 73.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 175 CRT mm mir. :>8.50Testing: Rated speed rpm : 275
rack: travel mm : 6.00
Tolerance mm : + 0.10 Rated speed rpm : 300 TORQUE CONTROL Rated speed rpm : 980 rack travel mm : 14.05 Tolerance mm : + 0.05 Rated speed rpm : 800 rack travel mm : 14.05 Tolerance mm : + 0.10 Rated speed rpm : 750 rack travel mm : 13.80 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 13.40 Tolerance mm : + 0.10 Rated speed rpm : 600 rack travel mm : 12.80 Tolerance mm : + 0.10 Rated speed rpm : 500 rack travel mm : 12.45 Tolerance mm : + 0.10 Rated speed rpm : 980 rack travel mm : 14.30 Tolerance mm : + 0.10

ANEROID/ALTI	TUDE
COMPENSATOR	<b>TEST</b>

#### SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.05
Tolerance mm : + 0.05

Rated speed rpm : 980
Pressure hPa : rack travel mm : 9.00
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 750
rack travel mm : 12.80
Tolerance mm : + 0.05

Pressure hPa : 380 rack travel mm : 10.30 Tolerance mm : + 0.15

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 361.0
Tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000s. : 15.0

Aneroid pressure
hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 199.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000 strokes : 10.0

Rated speed rpm	:		275	
10001 01100 11111			6.00 0.10	
Del. quantity cm3/1000 strokes Tolerance	:		14.5	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:		6.0	
cm3/1000s.	:		12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 01.07.98 Test oil : U1.U7.98

Combination No. : 0 402 946 027

Injection pump

Pump designation : PES6P120A320RS8047

EP type number : 0 412 926 029

Governor

Governer design. : RQV275...1250PA1312K

Governer no. : 0 421 815 966

Cust. part No. : CCEP 5160A 66-244

Customer—spec. information

Customer : RENAULT V.I.

Motor : MIDR 06.02.26L71 Power KW : 141.7

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Overflow quantity

min. L/h : 145 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.00 Tolerance mm : ← 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : '11.00

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

"NW after s.o.d. : -0.25 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

11.00 travel

Difference ° CS : 3.25

	Rated speed rpm : 325 guide sleeve
CRT ZERO POSITION	travel mm : 1.52 Tolerance mm : + 0.20
Rack travel in mm : 12.00 Tolerance mm : + 0.05	Rated speed rpm : 923 guide sleeve
	travel mm : 6.76 Tolerance mm : + 0.25
BASIC SETTING	+
Rated speed rpm : 1250	<ul><li>Rated speed rpm : 550</li><li>guide sleeve</li><li>travel mm : 3.92</li></ul>
Del. quantity cm3/1000 strokes : 180.0	Tolerance mm: : + 0.25
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 1650 + guide sleeve + travel mm : 13.50
Check tolerance cm3/1000S. : +- 4.0	Tolerance mm : +- 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1430
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 11.10 Tolerance mm : +- 2.70
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: -7.10 Tolerance mm: + 0.10 Del. quantity	Rated speed rpm : 1250 Arieroid pressure hPa : 1600
cm3/1000 strokes : 39.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Del. quantity cm3/1000 strokes : 180.0 Tolerance
cm3/1000s. : +- 6.0 Spreed Tolerance	cm3/100G strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed
cm3/1000 strokes : 8.0 Check tolerance	Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVED
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER + control lever
Rated speed rpm : 1340	position degree : 292.0 tolerance degree : +- 4.0
guide sleeve	+
travel mm : 9.96 Tolerance mm : +- 0.15	+ RATED SPEED + rack travel mm : -1.00

Rated speed rpm : 1310 Tolerance 1/min : +- 15	rack travel mm : -4.80 Tolerance mm : +- 0.20
rack travel mm : -8.00 Rated speed rpm : 1450	MEASUREMENT
Tolerance 1/min : + 5	Rated speed rpm : 1250
rack travel mm : -11.50 Tolerance mm : +- 0.55 Rated speed rpm : 1600	Pressure hPa : 240 rack travel mm : -3.20 Tolerance mm : + 0.20
LOW IDLE	Pressure hPa : 520 + rack travel mm : -1.30 Tolerance mm : + 0.05
	Start interlock
control lever position degree : 241.0 tolerance degree : +- 4.0	Rated speed rpm : > 175 Rated speed rpm : < 240
Setting point w/out bumper spring	Check speed 1/min : > 155
Rated speed rpm : 200	Check speed 1/min : < 260
CRT mm min. : < −5.70	1
Testing:	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 325	
rack travel mm : -7.10	+ Aneroid pressure
rack travel imm : -7.10 Tolerance mm : + 0.10	+ hPa : 1600
	hPa : 1600 + Rated speed rpm : 650
rack travel mm : -7.10 Tolerance mm : + 0.10  Rated speed rpm : 325	hPa : 1600 Rated speed rpm : 650 Del. quantity
	hPa : 1600 + Rated speed rpm : 650
Rated speed rpm : 325  TORQUE CONTROL	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0
Rated speed rpm : 325	hPa : 1600
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650	hPa : 1600
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650	+ hPa : 1600 - Rated speed rpm : 650 - Del. quantity - cm3/1000 strokes : 169.0 - Tolerance - cm3/1000 strokes : ← 3.0 - Check tolerance - cm3/1000s. : ← 6.0 - rack travel mm : -3.25
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : +- 0.10	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25	+ hPa : 1600 - Rated speed rpm : 650 - Del. quantity - cm3/1000 strokes : 169.0 - Tolerance - cm3/1000 strokes : ← 3.0 - Check tolerance - cm3/1000s. : ← 6.0 - rack travel mm : -3.25
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : +- 0.10  Rated speed rpm : 350	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : -
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : + 0.25	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : -
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : + 0.25	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 114.0 Tolerance
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : +- 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : +- 0.25  ANEROID/ALTITUDE COMPENSATOR TEST	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 114.0 Tolerance cm3/1000 strokes : + 1.0
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : + 0.25	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 114.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : +- 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : +- 0.25  ANEROID/ALTITUDE COMPENSATOR TEST	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 114.0 Tolerance cm3/1000 strokes : + 1.0
Rated speed rpm : 325  TORQUE CONTROL Rated speed rpm : 1250  Rated speed rpm : 650 rack travel mm : -2.10 Tolerance mm : + 0.10  Rated speed rpm : 350 rack travel mm : -3.25 Tolerance mm : + 0.25  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 1250 Pressure hPa : 1600	hPa : 1600 Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  rack travel mm : -3.25 Tolerance mm : + 0.25  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 114.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance

Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 14.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -7.10

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 39.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000s. : + 6.0

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.07.98 : ISO 4113

Combination No. : 0 400 863 020

Injection bump

Pump designation : PES3A95D410/3RS2905 EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A50858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1592 KY

Customer-spec. information

Customer : KHD-DMI

Motor : F3L912/913\_NEU Power KW : 40.5

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 3- 2

: 0-120-240 Phasing Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

D17

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 107.0 tolerance degree : + 4.0
Rack travel in mm: 8.50 Tolerance mm: + 0.10	RATED SPEED
Del. quantity cm3/1000 strokes : 11.5 Tolerance	rack travel mm : 10.35 Rated speed rpm : 1295 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	1
Check tolerance cm3/1000s. : +- 4.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1355 Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : 5.5 Check tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1530
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1380 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.25	Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50
Rated speed rpm : 1250 Aneroid pressure	Testing:
hPa : - Del. quantity cm3/1000 strokes : 76.0	Rated speed rpm : 325 rack travel mm : 8.50
Tolerance cm3/1000 strokes : + 1.0	Tolerance mm : + 0.10
Check tolerance cm3/1000s. : + 3.0 Spreed	rack travel mm : 2.00 Rated speed rpm : 510 Tolerance 1/min : +- 30
Tolerance cm3/1000 strokes : 3.5	TORQUE CONTROL

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : **←** 0.05

Rated speed rpm : 500

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 125.0 Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. : +- 10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 8.50 Tolerance mm :  $\leftarrow$  0.10

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance cm3/1000s.: <del>←</del> 4.5

Spreed

Tolerance cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s.9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.07.98 : ISO 4113

Combination No. : 0 400 864 099

Injection pump

Pump designation : PES4A950410/3RS2789

EP type number : 0 410 894 995

Governor

Coverner design. : RSV325...1250A5C858L

Governer no. : 0 420 232 621

Cust. part No. : 0423 1595 KY

Customer-spec. information

Customer : KHD-DMI : F4L912/913\_NEU Motor

Power KW : 54.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance : +- 3.0 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance + cm3/1000S. : 8.0 +	
	CONTROL LEVER
Dated and January 225	control lever
Rated speed rpm : 325	position degree : 107.0 tolerance degree : +- 4.0
Rack travel in mm: 8.50	rotor who dogrees
Tolerance mm : + 0.10	RATED SPEED
Del. quantity + cm3/1000 strokes : 11.5 +	rack travel mm : 10.35
Tolerance	Rated speed rpm : 1295 Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	Total ance thinks
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5	Rated speed rpm : 1355
Spreed +	Tolerance 1/min : +- 15
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1530
+	
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1380
WITH GOVERNOR	Tolerance 1/min : +- 15
WEITH CONTINUEN	Total direction to the second
+	
CHACE OF CASE (NOVE TON)	
GUIDE SLEEVE POSITION +	
	I OW TO E
	LOW IDLE
control lever	
control lever position degree : FREE	control lever
control lever	control lever position degree : 74.0
control lever position degree : FREE Rated speed rpm : 800	control lever
control lever position degree : FREE	control lever position degree : 74.0 tolerance degree : + 4.0
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	control lever position degree : 74.0 tolerance degree : + 4.0 Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 510
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	control lever position degree : 74.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 510

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : +- 0.05

Rated speed rpm : 500

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 125.0 Tolerance

cm3/1000 strokes : ← 7.5

Check tolerance

cm3/1000s. : +- 10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06,07,98 : ISO 4113

Combination No. : 0 400 864 102

Injection pump

Pump designation : PES4A95D410/3RS2789 EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A50851L

Governer no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information

Customer : KHD-DMI Motor : F4L912/913\_NEU Power KW : 59.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.00 Tolerance mm : 4 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : - 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35

Tolerance mm : ← 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: **←** 3.0

Spreed

Tolerance cm3/1000 strokes	: 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s.	: 8.0	
(may 10000).		CONTROL LEVER
		control lever
Rated speed rpm	: 325	position degree : 102.0 tolerance degree : +- 4.0
Rack travel in mm		
Tolerance mm Del. quantity	: — 0.10	RATED SPEED rack travel mm : 10.35
cm3/1000 strokes	: 11.5	rack travel mm : 10.35 Rated speed rpm : 1295
Tolerance cm3/1000 strokes	: ← 2.0	Tolerance 1/min : +- 5
Check tolerance	1	rack travel mm : 4.00
cm3/1000s. Spr <del>ee</del> d	: +- 4.5	Rated speed rpm : 1339 Tolerance 1/min : ← 15
Tolerance	Į	Foregrands Tranth : 4- 15
cm3/1000 strokes		rack travel mm : 0.85
Check tolerance cm3/1000s.		Tolerance mm : + 0.55 Rated speed rpm : 1510
	+	
(B) SETTING OF IN	IECTTON PLIMP	rack travel mm : 4.00 Rated speed rpm : 1360
WITH GOVERNOR	1	Tolerance 1/min : +- 15
	†	
GUIDE SLEEVE POSIT	TION +	LOW IDLE
	Į	FOM IDEE
control lever		andrah Jawa
position degree Rated speed rpm		control lever position degree : 69.0
,	+	tolerance degree : + 4.0
Rack travel in mm Tolerance mm		Setting point w/out bumper spring
	+	
governor spring pre-tension	<u> </u>	Rated speed rpm : 325 rack travel mm : 8.00
click setting x	: 3.00	rack travel mm : 8.00 Tolerance mm : + 0.10
	<u> </u>	
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	Rated speed rpm : 100
	+	CRT mm min. : > 19.50
Rated speed rpm Aneroid pressure	: 1200	Testing:
	: - +	
hPa Del. quantity cm3/1000 strokes	. 76.0	Rated speed rpm : 325
Tolerance	. ,0.0	rack travel mm : 8.50 Tolerance mm : + 0.10
cm3/1000 strokes	: + 1.0	
Check tolerance cm3/1000s.	: <del>+-</del> 3.0 +	rack travel mm : 2.00 Rated speed rpm : 473
Spreed	Ţ	Tolerance 1/min : + 30
Tolerance cm3/1000 strokes	: 3.5	
UHD/ IUUU SEPUKES	. 3.7	TORQUE CONTROL
	•	

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 500

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 125.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s. :  $\leftarrow$  10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 11.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5 Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 06.07.98 : ISO 4113

Combination No. : 0 400 866 222

Injection pump

Pump designation : PES6A950410/3RS2907 EP type number : 0 410 896 884

Governor

Governer design. : RSV325...1250A5C950L

Governer no. : 0 420 232 641

Cust. part No. : 0423 1601 KY

Customer-spec. information

Customer : KHD

: F6L912/913 NEU Motor

Power KW

: 81.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 0-50-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

: + 0.75 tolerance °NW

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed	- Tolerance
	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : 3.5	cm3/1000s. : 8.0
Check tolerance	
cm3/1000s. : 8.0	CONTROL LEVER
	L CONTROL LEVER
	control lever
Rated speed rpm : 325	position degree : 107.0
•	tolerance degree : +- 4.0
Rack travel in mm: 8.50	<del> </del>
Tolerance mm : +- 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5 - Tolerance -	Rated speed rpm : 1295 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	L Toterance mining . The J
Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1355
Spreed	Tolerance 1/min : + 15
Tolerance	<b>,</b> , , , , , , , , , , , , , , , , , ,
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance - cm3/1009S. : 9.0 -	Tolerance mm : +- 0.55 Rated speed rpm : 1550
	L Rated speed (pill : 1330
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1400
WITH GOVERNOR	Tolerance 1/min : + 15
	· · · · · · · · · · · · · · · · · · ·
<del>1</del>	
CHIDE SLEEVE POSITION	
GUIDE SLEEVE POSITION	
GUIDE SLEEVE POSITION	LOW IDLE
GUIDE SLEEVE POSITION  control lever	LOW IDLE
control lever - position degree : FREE -	LOW IDLE control lever
control lever	LOW IDLE  control lever  position degree : 73.0
control lever	LOW IDLE control lever
control lever - position degree : FREE - Rated speed rpm : 800 - Rack travel in mm : 0.50 -	LOW IDLE  control lever  position degree : 73.0  tolerance degree : + 4.0
control lever	LOW IDLE  control lever  position degree : 73.0
control lever - position degree : FREE - Rated speed rpm : 800 - Rack travel in mm : 0.50 -	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring pre-tension	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring	LOW IDLE  control lever position degree : 73.0 tolerance degree : +4.0  Setting point w/out bumper spring
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring pre-tension	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring pre-tension	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance	LOW IDLE  control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 76.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 73.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 8.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : + 0.10

TORQUE CONTROL .

Rated speed rpm : 1250 rack travel mm : 11.35 Tolerance mm : + 0.05

Rated speed rpm : 500

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75

Del. quantity

cm3/1000 strokes : 125.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : + 4.5

Spreed Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.07.98 Edition : UC.U7.90 : ISO 4113 Test oil

Combination No. : 0 400 876 421

Injection pump

Pump designation : PES6A95D32ORS2848 EP type number : 0 410 896 892

Governor

Governer design. : RSV500...1100A5C2269

Governer no. : 0 420 233 338

Cust. part No. :

Customer-spec. information Customer : VALMET : 634 DS Motor : 140.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm :

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.55 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Beginning of delivery differende

and maximum rack

 $\begin{array}{cccc} \text{travel} & : & 10.50 \\ \text{Tolerance mm} & : & \leftarrow & 1.50 \end{array}$ Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 133.0

Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000s. : +- 3.0 - Spreed - Tolerance
Spreed	cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 500	control lever position degree : 100.0 tolerance degree : + 4.0
Rack travel in mm : 4.30 Tolerance mm : + 0.10 Del. quantity	RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1145
cm3/1000 strokes : 21.0 Tolerance	Tolerance 1/min : +- 5
<pre>cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 4.5</pre>	rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : + 15
Spreed Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5 Check tolerance	Tolerance mm : + 0.55 Rated speed rpm : 1375
cm3/1000s. : 9.0	+ rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1225 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring	+ Rated speed rpm : 100
<pre>pre-tension click setting x : 3.75</pre>	+ CRT mm min. : > 19.50
	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100	+ Rated speed rpm : 500 + rack travel mm : 4.30 + Tolerance mm : + 0.10
Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 133.0	rack travel mm : 2.00 Rated speed rpm : 530 Tolerance 1/min : + 30

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 14.05 Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 14.60 Tolerance mm : + 0.10

Rated speed rpm : 975
rack travel mm : 14.30
Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.60
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : rack travel mm : 12.90
Tolerance mm : + 9.05

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 13.20 Tolerance mm : + 0.10

Pressure hPa : 655
rack travel mm : 13.90
Tolerance mm : + 0.05

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 137.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

rack travel mm : 14.30 Tolerance mm : +- 0.10

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

cm3/1000 strokes : 103.0

Tolerance

nm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 195.0

cm3/1000 strokes : 195.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. :  $\leftarrow$  10.0

## LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 4.30
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 21.0
Tolerance
cm3/1000 strokes : + 3.0

cm3/1000 strokes : + 3.0 Check tolerance

cm3/1000s. : + 4.5 Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.07.98 : ISO 4113

Combination No. : 0 402 046 855

Injection pump

Pump designation : PES6P110A320RS3329 EP type number : 0 412 016 743

Governor

Governer design. : RQV325...1300PA1119

Governer no. : 0 421 814 083

Cust. part No. : 1284418/4

Customer-spec. information Customer : DAF Motor : NS156M Power KW : 156.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : ← 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

REMARKS

x inside diameter: 2.0 x length mm : 600

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : 

→ 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 11.85

Tolerance mm : + 0.05

Del. quantity + cm3/1000 strokes : 144.0 +	Tolerance mm : + 0.25
Tolerance 1.0	Rated speed rpm : 455 guide sleeve
cm3/1000 strokes : + 1.0 + Check tolerance	travel mm : 2.52 Tolerance mm : + 0.25
cm3/1000s. : +- 4.0	Rated speed rpm : 530 guide sleeve
Spreed	travel mm : 2.93 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 1640 guide sleeve
Check tolerance cm3/1000s. : 12.0	travel mm : 11.50 Tolerance mm : + 0.50
	GUIDE SLEEVE POSITION
Rated speed rpm : 325	
Rack travel in mm: 4.50 Tolerance mm: + 0.10	control lever position degree : - 1
Del. quantity + cm3/1000 strokes : 26.0 + Tolerance +	Rated speed rpm : 1450  Rack travel in mm : 16.80
cm3/1000 strokes : +- 2.5 Check tolerance	Tolerance mm : + 1.30
cm3/1000S. : +- 5.0 +- Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance + cm3/1000 strokes : 4.0	Rated speed rpm : 1000
Check tolerance cm3/1000s. : 8.0	Aneroid pressure hPa : 1000 Del. quantity
(B) SETTING OF INJECTION PUMP	cm3/1000 strokes : 144.0 Tolerance
WITH GOVERNOR +	cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : +- 4.0 Spreed Tolerance
Rated speed rpm : 1353 + guide sleeve +	cm3/1000 strokes : 8.0 Check tolerance
travel mm : 8.29 + Tolerance mm : + 0.20 +	cm3/1000s. : 12.0
Rated speed rpm : 325	CONTROL LEVER
travel mm : 1.33 + Tolerance mm : + 0.15	control lever
Rated speed rpm : 900	position degree : 122.0 tolerance degree : +- 4.0
guide sleeve + travel mm : 4.92	RATED SPEED
Tolerance mm : + 0.25 +	rack travel mm : 10.85 Rated speed rpm : 1342
Rated speed rpm : 405 + guide sleeve +	Tolerance 1/min : +- 5 Check
travel mm : 2.07 +	speed 1/min : +- 10

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 1460
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1600
LOW IDLE	
control lever position degree tolerance degree	: 83.0 : ← 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 225
CRT mm min.	: > 6.0C
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 4.50 : ← 0.10
Rated speed rpm	: 375
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.85 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.85 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 11.85 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 11.85

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : - : 7.35 : + 0.20
MEASUREMENT	
Rated speed rpm	: 600
Pressure hPa rack travel mm Tolerance mm	: 370 : 10.75 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 200 : 8.40 : +- 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 700
Del. quantity cm3/1000 strokes Tolerance	: 145.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s.	: +- 5.0
rack travel mm Tolerance mm	: 11.85 : + 0.05
Aneroid pressure hPa	
Rated speed rpm	1000
Del. quantity cm3/1000 strokes	: 94.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 3.5
LOW IDLE	
Rated speed rpm	: 325

Rack travel in mm : 4.50 Tolerance mm : + 0.10

Del. quantity		
cm3/1000 strokes	:	26.0
Tolerance		
cm3/1000 strokes	: +	2.5
Check tolerance		
cm3/1000s.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000S.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.07.98 : ISO 4113

Combination No. : 0 402 046 856

Injection pump

Pump designation : PE6P110A320RS3329Z EP type number : 0 412 016 744

Governor Governer design. : RQV325...1300PA1119

Governer no. : 0 421 814 083

Cust. part No. : 1284417/5

Customer-spec. information Customer : DAF Motor : NS133M Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: –30ე Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85 Tolerance mm :  $\leftarrow$  0.05

Del. quantity	Tolerance mm : +- 0.25
cm3/1000 strokes : 146.0	Rated speed rpm : 455
Tolerance	guide sleeve
cm3/1000 strokes : + 1.0 +	travel mm : 2.52 Tolerance mm : +- 0.25
Check tolerance	
cm3/1000s. : + 4.0	Rated speed rpm : 530 guide sleeve
Spreed	travel mm : 2.93
Tal	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 1640
	guide sleeve
Check tolerance : 12.0	travel mm : 11.50 Tolerance mm : +- 0.50
	Total arise min
<u>†</u>	GUIDE SLEEVE POSITION
Rated speed rpm : $325$	GOIDE SEELVE POSITION
Rack travel in mm: 4.50	control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity	Rated speed rpm : 1450
cm3/1000 strokes : 26.0	Rack travel in mm : 10.80
cm3/1000 strokes : + 2.5 +	Tolerance mm : + 1.30
Check tolerance + 5.0 + 5.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance + cm3/1000 strokes : 4.0 +	Rated speed rpm : 1000
Check tolerance	Aneroid pressure
cm3/1000s. : 8.0	hPa : 1000 Del. quantity
<del>-</del>	cm3/1000 strokes : 146.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : +- 1.0
WITH GOVERNOR	Check tolerance
CITAL SIEEUE TOAVE	cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	Spreed Tolerance
Rated speed rpm : 1353	cm3/1000 strokes : 8.0
guide sleeve + travel mm : 8.29 +	Check tolerance cm3/1000S. : 12.0
Tolerance mm : + 0.20	
Rated speed rpm : 325	
guide sleeve	CONTROL LEVER
travel mm : 1.33 + Tolerance mm : + 0.15 +	control lever
+	position degree : 122.0
Rated speed rpm : 900 + guide sleeve +	tolerance degree : +- 4.0
travel mm : 4.92	RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 10.85 Rated speed rpm : 1342
Rated speed rpm : 405	Tolerance 1/min : +- 5
guide sleeve + travel mm : 2.07 +	Check
tiayet Hall : C.U/ +	speed 1/min : +- 10

rack travel mm : Rated speed rpm : Tolerance 1/min : Check speed 1/min : rack travel mm :	1460 +- 15 +- 20 0.50
Tolerance mm : Rated speed rpm :	+- 0.50 1600
LOW IDLE	
control lever position degree : tolerance degree :	83.0 +- 4.0
Setting point w/out	bumper spring
Rated speed rpm :	225
CRT mm min. :	> 3.60
Testing:	
Rated speed rpm : rack travel mm : Tolerance mm :	325 4.50 ← 0.10
Rated speed rpm :	375
TORQUE CONTROL Rated speed rpm : rack travel mm : Tolerance mm :	1000 11.85 + 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	700 11.85 ← 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	1300 11.85 +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm : Pressure hPa : rack travel mm : Tolerance mm :	600 1000 11.85 + 0.05

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : - : 6.50 : + 0.20
MEASUREMENT	
Rated speed rpm	: 600
Pressure hPa rack travel mm Tolerance mm	: 310 : 10.55 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 130 : 7.85 : + 0.10
FUEL DELIVERY CHA	NRACTERISTICS

Aneroid pressure hPa Rated speed rpm Del. quantity	:		000 200	
cm3/1000 strokes Tolerance	:	1	145.0	
cm3/1000 strokes Check tolerance	:	+-	2.0	
cm3/1000s.	•	+	5.0	
rack travel mm	:	1	11.85	_
Tolerance mm	:	+	0.05	
Aneroid pressure				-

Aneroid pressure			
hPa	:		_
Rated speed rpm	:	1	000
Del. quantity			
cm3/1000 strokes			83.0
Tolerance			
cm3/1000 strokes	:	+	1.0
Check tolerance			
cm3/1000s.	:	+-	3.5

# LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes	:	26.0
Tolerance cm3/1000 strokes	: +-	2.5
Check tolerance cm3/1000s.	: +-	5.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	•	4.0
cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.07.98 Edition : ISO 4113 Test oil

Combination No. : 0 402 046 861

Injection pump

Pump designation : PE6P110A320RS3329 EP type number : 0 412 016 743

Governor

Governer design. : RQ325/1300PA1150 Governer no. : 0 421 801 716

Cust. part No. : 1284420/4

Customer-spec. information Customer : DAF Motor : NS156M Power KW : 156.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 144.0	† Tolerance mm : + 0.10
Tolerance	Rated speed rpm : 590 guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 6.00 Tolerance mm : + 0.10
Check tolerance cm3/1000S. : +- 4.0	Rated speed rpm : 1570 guide sleeve
Spreed	+ travel mm : 11.50 + Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : 8.0	
Check tolerance cm3/1000S. : 12.0	+ GUIDE SLEEVE POSITION
	T control lever
Battasi amaad amaa 705	position degree : 109 Rated speed rpm : 650
Rated speed rpm : 325	Rack travel in mm: 20.00
Rack travel in mm : 4.50 Tolerance mm : +- 0.10	+ Tolerance mm : + 0.80
Del. quantity	
cm3/1000 strokes : 26.0 Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 2.5	Rated speed rpm : 1000
Check tolerance cm3/1000s. : +- 5.0	Aneroid pressure
Spreed 5.0	+ hPa : 1000 + Del. quantity
Tolerance cm3/1000 strokes : 4.0	+ cm3/1000 strokes : 144.0
cm3/1000 strokes : 4.0 Check tolerance	+ Tolerance + cm3/1000 strokes : + 1.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000s. : + 4.0 + Spreed
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : 8.0 + Check tolerance
	+ cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	‡
Rated speed rpm : 1351 guide sleeve	CONTROL LEVER
travel mm : 6.37	T CONTROL LEVER
Tolerance mm : +- 0.10	+ control lever
Rated speed rpm : 325	+ position degree : 93.0 + tolerance degree : +- 4.0
guide sleeve travel mm : 1.99	+ RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 10.85
Rated speed rpm : 1300	Rated speed rpm : 1345 Tolerance 1/min : +- 5
guide sleeve	+ Check
travel mm : 6.00 Tolerance mm : + 0.10	speed 1/min : + 10
roter drive inti . To U. IU	rack travel mm : 4.00
Rated speed rpm : 427	+ Rated speed rpm : 1450
guide sleeve travel mm : 3.54	+ Tolerance 1/min : +- 15

Check

speed 1/min : +- 20

Rated speed rpm : 1600

LOW IDLE

control lever

position degree : 72.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 5.90

Testing:

325 Rated speed rpm : rack travel mm : 4.50

: +- 0.10 Tolerance mm

rack travel mm : 2.00

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 11.85

Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 11.85

Tolerance mm :  $\leftarrow$  0.05

Rated speed rpm : 1300 rack travel mm : 11.85 Tolerance mm

: **←** 0.05 Rated speed rpm : 1000

rack travel mm : 12.85 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa : 1000

rack travel mm : 11.85

Tolerance mm :  $\leftarrow$  0.05

Rated speed rpm : 600 Pressure hPa

rack travel mm : 7.35 Tolerance mm : **←** 0.20

**MEASUREMENT** 

Rated speed rpm : 600

Pressure hPa : 370 rack travel mm : 10.75 : +- 0.05 Tolerance mm

Pressure hPa : 200 rack travel mm : 8.55 Tolerance mm :  $\leftarrow$  0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1000 Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +-5.0

rack travel mm : 11.85 Tolerance mm : → 0.05

Aneroid pressure

hPa Rated speed rpm : 1000

Del. quantity cm3/1000 strokes : 94.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +-3.5

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.50 Tolerance mm :  $\leftarrow$  0.10

Del. quantity cm3/1000 strokes	:	26.0	
Tolerance cm3/1000 strokes	: +-	2.5	
Check tolerance cm3/1000s. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes	:	4.0	
Check tolerance cm3/1000s.	:	8.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 03.07.98 Test oil : ISO 4113

Combination No. : 0 402 046 873

Injection pump

Pump designation : PES6P110A320RS3329 EP type number : 0 412 016 743

Governor

Governer design: : RQV325...1250PA1251 Governer no. : 0 421 814 164

Cust. part No. : 1305227

Customer—spec. information Customer : DAF Motor : NS177M Power KW : 177.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : + 0.10 Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 149.5	Tolerance mm : +- 0.25  Rated speed rpm : 1510
Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : + 4.0	GUIDE SLEEVE POSITION
Spreed	
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1 Rated speed rpm : 1360
Check tolerance cm3/1000s. : 12.0	Rack travel in mm : 11.25 Tolerance mm : +- 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.40 Tolerance mm: + 0.10 Del. quantity	Rated speed rpm : 1000 Aneroid pressure hPa : 1500
cm3/1000 strokes : 26.0	Del. quantity cm3/1000 strokes : 149.5
cm3/1000 strokes : + 2.5 Check tolerance cm3/1000S. : + 5.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed Tolerance	cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : 4.0 + Check tolerance cm3/1000s. : 8.0 +	Tolerance cm3/1000 strokes : 8.0 Check tolerance
- CIIIS/ 18883:	cm3/1000s. : 12.0
(B) SETTING OF INJECTION PUMP + WITH GOVERNOR +	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1308	position degree : 123.0 tolerance degree : +- 4.0
guide sleeve : 10.40	RATED SPEED
Tolerance mm : +- 0.15	rack travel mm : 11.25 Rated speed rpm : 1290
Rated speed rpm : 325	Tolerance 1/min : +- 5
guide sleeve	Check
travel mm : 1.25 + Tolerance mm : + 0.20 +	speed 1/min : +- 10
Total arite likit . TO 0.20	rack travel mm : 4.00
Rated speed rpm : 868	rack travel mm : 4.00 Rated speed rpm : 1375
guide sleeve + travel mm : 5.45 +	Tolerance 1/min : +- 15 Check
Tolerance mm : + 0.25	speed 1/min : +- 20
Rated speed rpm : 520	rack travel mm : 0.50
guide sleeve + travel mm : 3.02 +	Tolerance mm : +- 0.50
travel mm : 3.02 +	Rated speed rpm : 1500

#### LOW IDLE

control lever

position degree : 76.0 tolerance degree : +- 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 5.90

Testing:

Rated speed rpin : 325
rack travel mm : 4.40
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 12.25 Tolerance mm : + 0.10

Rated speed rpm : 1250 rack travel mm : 12.25 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : rack travel mm : 7.00
Tolerance mm : + 0.20

## **MEASUREMENT**

Rated speed rpm : 600

Pressure hPa : 430 rack travel mm : 10.90 Tolerance mm : + 0.05

Pressure hPa : 220 rack travel mm : 7.85 Tolerance mm : +- 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 700 Del. quantity

cm3/1000 strokes : 153.0

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000S. : +- 6.0

rack travel mm : 12.25
Tolerance mm : + 0.10

Aneroid pressure

hPa : -Rated speed rpm : 1000 Del. quantity

cm3/1000 strokes : 92.0 Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.5

## LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 4.40
Tolerance mm: + 0.10
Del. quantity

cm3/1000 strokes : 26.0 Tolerance

cm3/1000 strokes : +- 2.5 Check tolerance

cm3/1000s. : +- 5.0 Spreed

Tolerance cm3/1000 strokes : 4.0 Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.07.98

Combination No. : 0 402 046 875

Injection pump

Pump designation : PES6P110A320RS3329Z

EP type number : 0 412 016 744

Governor

Soverner design. : RQV325...1250PA1251

Governer no. : 0 421 814 164

Cust. part No. : 1309376/0

Customer-spec. information Customer : DAF Motor : NS156M Power KW : 156.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : <del>←</del> 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : ← 0.1

Overflow quantity

min. l/h : 160 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

: 1-5-3-6-2-: 4 Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10 Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85 Tolerance mm :  $\leftarrow$  0.05

1	guide sleeve
Del. quantity cm3/1000 strokes : 144.0	travel mm : 3.02 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1510 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 13.50 Tolerance mm : + 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1
Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 1370
<u> </u>	Rack travel in mm : 10.85 Tolerance mm : +- 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.50 + Tolerance mm: + 0.10	Rated speed rpm : 1000
Del. quantity cn3/1000 strokes : 26.0	Aneroid pressure hPa : 1500
Tolerance + cm3/1000 strokes : +- 2.5 +	Del. quantity cm3/1000 strokes : 144.0
Check tolerance cm3/1000s. : + 5.0	Tolerance cm3/1000 strokes : +- 1.0
Spreed Tolerance +	Check colerance cm3/1000S. : +- 4.0
cm3/1000 strokes : 4.0 + Check tolerance + Check tolerance	Spreed Tolerance
cm3/1000s. : 8.0	cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Rated speed rpm : 1298 - guide sleeve	control lever position degree : 123.0 tolerance degree : +- 4.0
travel mm : 10.25 +	DISTR AREA
Tolerance mm : + 0.15	RATED SPEED rack travel mm : 10.85
Rated speed rpm : 325 - guide sleeve	Rated speed rpm : 1300 Tolerance 1/min : +- 5
travel mm : 1.25 + Tolerance mm : + 0.20 +	Check speed 1/min : +- 10
Rated speed rpm : 863	rack travel mm : 4.00 Rated speed rpm : 1375
travel mm : 5.41 + Tolerance mm : + 0.25 +	Tolerance 1/min : +- 15 Check
Rated speed rpm : 520	speed 1/min : +- 20
+	rack travel mm : 0.50

Tolerance mm Rated speed rpm	: ← 0.50 : 1500	} F	Rated speed rpm Pressure hPa	: 370
		_	rack travel mm Tolerance mm	: 10.75 : +- 0.05
LOW IDLE		<u> </u>	Pressure hPa rack travel mm Tolerance mm	: 8.40
control lever	34.0	+		
position degree tolerance degree		İ.		
total alice degliee	4.0	Į,	FUEL DELIVERY CHA	RACTERISTICS
Setting point w/o	ut bumper spring	+	-	
Rated speed rpm	: 225	+ +	Aneroid pressure	: 1500
CRT mm min.	: > 6.00	+ F	Rated speed rpm Del. quantity	: 700
Testing:		+ 1	Del. quantity cm3/1000 strokes Tolerance	: 145.0
Rated speed rpm rack travel mm	: 325		cm3/1000 strokes	
rack travel mm Tolerance mm	÷ 4.50	+ 9	Check tolerance	
		Ţ ,	cm3/1000s.	: +- 6.0
Rated speed rpm	: 3/5	İ,	rack travel mm	: 11.85
			Tolerance mm	
TORQUE CONTROL	4000	+		
Rated speed rpm	: 1000 : 11.85	<b>†</b> ,	ananaid maanus	
rack travel mm	: + 0.05		Aneroid pressure hPa	• -
		+ 6	Rated speed rpm	: 1000
Rated speed rpm	: 700	1 +	Del. quantity	
rack travel mm Tolerance mm	: 11.85		cm3/1000 strokes Tolerance	: 94.0
totel wite init	. += 0.10		cm3/1000 strokes	: +- 1.0
Rated speed rpm	: 1250	+ (	Check tolerance	
rack travel mm Tolerance mm	: 11.85 : ← 0.10	+ '	cm3/1000s.	: +- 3.5
		_ ‡		
ANEROID/ALTITUDE COMPENSATOR TEST		‡		
		+ -		<del></del>
SETTING		+ + F	Rated speed rpm	: 325
Rated speed rpm	: 600	+		
Pressure hPa	: 1500		Rack travel in mm	
rack travel mm Tolerance mm	: 11.85 : +- 0.05		Tolerance mm Del. quantity	: +- 0.10
TOTOL CHILD HALL	0.05		cm3/1000 strokes	: 26.0
Rated speed rpm		+ 7	Tolerance	
Pressure hPa	: -		cm3/1000 strokes	: +- 2.5
rack travel mm Tolerance mm	: 7.35 : + 0.20		Check tolerance cm3/1000s.	: <del>+-</del> 5.0
. July and the	. · J.LU		Spreed	
MEASUREMENT		+ 1	Tolerance	
		+ 0	cm3/1000 strokes	: 4.0

Check tolerance cm3/1000s.	:	8.0	
***************************************			

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98 Test oil : ISO 4113

Combination No. : 0 402 046 876

Injection bumb

Pump designation : PES6P110A320RS3329Y EP type number : 0 412 016 756

Governor

Governer design. : RQV325...1250PA1251

Governer no. : 0 421 814 164

Cust. part No. : 1309375/0

Customer—spec. information Customer : DAF Motor : NS133M Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

cneck

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85Tolerance mm : + 0.05

	+ guide sleeve
Del. quantity cm3/1000 strokes : 146.0	travel mm : 3.02 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1510 guide sleeve travel mm : 13.50
Check tolerance cin3/1000s. : + 4.0	travel mm : 13.50 Tolerance mm : + 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1
Check tolerance : 12.0	Rated speed rpm : 1370
	Rack travel in mm : 10.85 Tolerance mm : + 1.30
Rated speed rpm : 325	
Rack travel in mm : 4.50	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10 Del quantity	Rated speed rpm : 1000 Aneroid pressure
cm3/1000 strokes : 26.0 Tolerance	hPa : 1000 Del. quantity
cm3/1000 strokes : + 2.5 Check tolerance	cm3/1000 strokes : 146.0
cm3/1000s. : + 5.0 Spreed	cm3/1000 strokes : + 1.0 Check tolerance
Tolerance	+ cm3/1000s. : $+$ 4.0
cm3/1000 strokes : 4.0 Check tolerance	+ Spreed Tolerance
cm3/1000s. : 8.0	cm3/1000 strokes : 8.0 Check tolerance
(B) SETTING OF INJECTION PUMP	cm3/1000s. : 12.0
WITH GOVERNOR	<u> </u>
GUIDE SLEEVE TRAVEL	CONTROL LEVER
	control lever
Rated speed rpm : 1298 guide sleeve	position degree : 123.0 tolerance degree : + 4.0
travel mm : 10.25	+
Tolerance mm : +- 0.15	+ RATED SPEED + rack travel mm : 10.85
Rated speed rpm : 325	Rated speed rpm : 1285
guide sleeve travel mm : 1.25	+ Tolerance 1/min : +- 5 + Check
travel mm : 1.25 Tolerance mm : + 0.20	speed 1/min : +- 10
Rated speed rpm : 863	rack travel mm : 4.00
guide sleeve travel mm : 5.41	+ Rated speed rpm : 1360 + Tolerance 1/min : +- 15
Tolerance mm : + 0.25	+ Check + speed 1/min : +- 20
Rated speed rpm : 520	rack travel mm : 0.50
	T I GUN LI GVEC INIII : U. DU

Tolerance mm Rated speed rpm  LOW IDLE  control lever	: ← 0.50 : 1500	Rated speed rpm : 600  Pressure hPa : 310 rack travel mm : 10.55 Tolerance mm : + 0.05  Pressure hPa : 130 rack travel mm : 7.85 Tolerance mm : + 0.10
position degree tolerance degree	: +- 4.0	FUEL DELIVERY CHARACTERISTICS
Setting point w/o		‡ <u></u>
Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm	: > 6.00 : 325	Aneroid pressure  hPa : 1000  Rated speed rpm : 700  Del. quantity  cm3/1000 strokes : 147.5  Tolerance  cm3/1000 strokes : + 3.0  Check tolerance  cm3/1000s. : + 6.0
Rated speed rpm	: 375	rack travel mm : 11.85 Tolerance mm : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST	: 11.85 : ← 0.05 : 700 : 11.85 : ← 0.10	Aneroid pressure hPa : - Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT	: 600 : 1000 : 11.85 : + 0.05 : 600 : - : 6.50 : + 0.20	Rated speed rpm : 325  Rack travel in mm : 4.50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : + 2.5 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 4.0

Check tolerance cm3/1000S.	:	8.0	
End of test speci	ifica	tion sheet	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.07.98 Edition Test oil : ISO 4113

Combination No. : 0 402 046 881

Injection pump

Pump designation : PES6P110A320RS3329 EP type number : 0 412 016 743

Governor

Governer design. : RQ325...1250PA1370

Governer no. : 0 421 801 828

Cust. part No. : 1305236

Customer-spec. information Customer : DAF Motor : NS177M Power KW : 177.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 140
Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 2.0

x inside diameter: 6.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance  $^{\circ}NW$  : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25 Tolerance mm : + 0.05

		+ guide sleeve
Del. quantity		+ travel mm : 3.48
cm3/1000 strokes	: 149.5	+ Tolerance mm : + 0.10
uner rood strokes	. 147.5	1 Total direct min
Tolerance		Rated speed rpm : 590
	: +- 1.0	
cm3/1000 strokes	: +- 1.0	+ guide sleeve
	<del></del>	+ travel mm : 6.00
Check tolerance		+ Tolerance mm : + 0.10
cm3/1000s.	: +- 4.0	†
		+ Rated speed rpm : 1460
Spreed		🕂 guide sleeve
		† travel mm : 11.50
Tolerance		+ Tolerance mm : + 0.50
cm3/1000 strokes	: 8.0	
Check tolerance	<del></del>	GUIDE SLEEVE POSITION
cm3/1000S.	: 12.0	7 00105 055565 10011104
Ciii 37 10003.	. 12.0	
		T control lever
Dudad analysis	. <b>7</b> 0F	position degree : 109
Rated speed rpm	: 325	†
	, ,=	+ control lever
Rack travel in mm		+ position degree : 109
Tolerance mm	: +- 0.10	+ Rated speed rpm : 600
Del. quantity		+
cm3/1000 strokes	: 26.0	+ Rack travel in mm : 20.00
Tolerance		+ Tolerance mm : +- 0.80
cm3/1000 strokes	: +- 3.0	
Check tolerance		
cm3/1000s.	: +- 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	0.0	TOLE LOND DELIVERY AT TOLE LOND STOP
•		Detect amond man 4000
Tolerance		+ Rated speed rpm : 1000
cm3/1000 strokes	: 4.0	+ Aneroid pressure
Check tolerance		+ hPa : 1500
cm3/1000\$.	: 8.0	+ Del. quantity
		+ cm3/1000 strokes : 149.5
		+ Tolerance
(B) SETTING OF IN	JECTION PUMP	+ cm3/1000 strokes : +- 1.0
WITH GOVERNOR		+ Check tolerance
		+ cm3/1000s. : +- 4.0
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
GUIDE SLEEVE TRAV	FL.	- Tolerance
	<del></del>	+ cm3/1000 strokes : 8.0
Rated speed rpm	: 1292	Check tolerance
guide sleeve	. 1676	+ cm3/1000s. : 12.0
travel mm	: 6.37	T (1110) 10003. : 18.0
Tolerance mm	: +- 0.15	†
Om A and the control of	705	CONTROL LEUR
Rated speed rpm	: 325	+ CONTROL LEVER
guide sleeve		†
travel mm	: 1.99	+ control lever
Tolerance mm	: <b>+-</b> 0.20	position degree : 97.0
		tolerance degree : +- 4.0
Rated speed rpm	: 1000	<del>-</del>
guide sleeve		+ RATED SPEED
travel mm	: 6.00	rack travel mm : 11.25
Tolerance mm	: + 0.10	Rated speed rpm : 1290
- Occidence (IIII)	0.10	Tolerance 1/min : + 5
Dated around now	. 7.24	
Rated speed rpm	: 426	+ Check
		+ speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1370
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1500

LOW IDLE

control lever position degree :

position degree : 75.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325 rack travel mm : 4.40 Tolerance mm : +- 0.10

rack travel mm : 2.00 Rated speed rpm : 415 Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 1250 rack travel mm : 12.25 Tolerance mm : +-- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 600

Pressure hPa : rack travel mm : 7.00
Tolerance mm : +- 0.20

**MEASUREMENT** 

Rated speed rpm : 600

Pressure hPa : 430 rack travel mm : 10.90 Tolerance mm : + 0.05

Pressure hPa : 220 rack travel mm : 8.10 Tolerance mm : ÷ 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 92.0
Tolerance

cm3/1000 strokes : + 1.0 Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance nm : ← 0.10
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : ← 3.0
Check tolerance

Check tolerance cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

End of test specification sheet

F02

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.98 Test oil : ISO 4113

Combination No. : 0 402 076 821

Injection nump

Pump designation : PES6P120A720RS3340 EP type number : 0 412 026 773

Governor

Governer design. : RSV650...1050P8A566

: ⊸6

Governer no. : 0 421 833 615

Cust. part No. :

Customer-spec. information

Customer : NH

Motor : EP 040 B Power KW : 213.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 110 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : ← 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

## Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025	governor spring pre-tension click setting x : 2.50
Rack travel in mm : 13.35 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity - cm3/1000 strokes : 204.0 -	Rated speed rpm : 1025 Aneroid pressure
Tolerance	hPa : 1700 Del. quantity cm3/1000 strokes : 204.0
Check tolerance : +- 6.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000S. : + 6.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 5.0 -	cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : 9.0	cm3/1000s. : 9.0
	CONTROL LEVER
Rated speed rpm : 650	control lever 93.0
Rack travel in mm: 4.70 - Tolerance mm: + 0.10 - Del. quantity -	tolerance degree : +- 4.0
cm3/1000 strokes : 23.0 - Tolerance -	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0	Rated speed rpm : 1067 rack travel mm : 12.30
Spreed Tolerance	Rated speed rpm : 1097 Tolerance 1/min : + 5
cm3/1000 strokes : 8.0 - Check tolerance -	rack travel mm : 4.00
cm3/1000s. : 12.0 -	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP - WITH GOVERNOR -	
	Rated speed rpm : 1068 rack travel mm : 12.30
GUIDE SLEEVE POSITION	Rated speed rpm : 1098 Tolerance 1/min : + 5 rack travel mm : 4.00
control lever position degree : -3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rack travel in mm : 0.50 - Tolerance mm : +- 0.20 -	Rated speed rpm : 1069 rack travel mm : 12.30
	Rated speed rpm : 1099

Tolerance 1/min : +- 5 rack travel mm : 4.00	+ Rated speed rpm : 720
rack travel mm : 0.85	TORQUE CONTROL
rack travel mm : 0.05	
Tolerance mm : + 0.55	+ Rated speed rpm : 1025
	rack travel mm : 13.35
	+ Tolerance mm : +- 0.05
Rated speed rpm : 1070 rack travel mm : 12.30	+
rack travel mm : 12.30	Rated speed rpm : 750 rack travel mm : 14.00 Tolerance mm : + 0.10
	+ rack travel mm : 14.00
Rated speed rpm : 1100	+ Tolerance mm : + 0.10
Tolerance 1/min : + 5	
rack travel mm : 4.00	A Rated speed rpm · 650
Table Charte Chair	Rated speed rpm : 650 rack travel mm : 14.05 Tolerance mm : + 0.15
rack travel mm : 0.85	Talenance mm : 14.05
Tolerance mm : + 0.55	T roceratice that . T 0.15
Tolerance mm : + 0.55	†
	+ ANEROID/ALTITUDE
Rated speed rpm : 1071	+ COMPENSATOR TEST
Rated speed rpm : 1071 rack travel mm : 12.30	+
	+
Rated speed rpm : 1101	+ SETTING
Tolerance 1/min : +- 5	<u> </u>
rack travel mm : 4.00	Rated speed rpm : 500
THE CONTRACT OF THE CONTRACT O	+ Pressure hPa : 1700
nock though the . O.SE	T riessure in . 1700
rack travel mm : 0.85 Tolerance mm : +- 0.55	rack travel mm : 14.00
iolerance mm : +- 0.55	+ Tolerance mm : + 0.15
	+
	+ Rated speed rpm : 500
Rated speed rpm : 1072	+ Pressure hPa : -
rack travel mm : 12.30	rack travel mm : 7.90
	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 7.90 Tolerance mm : + 0.15
Rated speed rpm : 1102	1
Tolerance 1/min : +- 5	↓ MEASUREMENT
rack travel mm : 4.00	THEASONEHEIVI
rack travet min . 4.00	T Dated aread are . 500
	+ Rated speed rpm : 500
rack travel mm : 0.85	†
Tolerance mm : +- 0.55	+ Pressure hPa : 980
	+ rack travel mm : 12.25
	→   † Tolerance mm : +- 0.10
LOW IDLE	+
	→ Start interlock
control lever	1
position degree : 74.0	Rated speed rpm : > 100
tolerance degree : +- 4.0	Traced speed (pill . > 100
total ance vegree . T 4.0	T Check
Cotting point/aut buman amains	
Setting point w/out bumper spring	+ speed 1/min : > 80
<b>B</b> 4-3 U.S. 250	†
Rated speed rpm : 650	
rack travel mm : 4.20	+ FUEL DELIVERY CHARACTERISTICS
Tolerance mm : +- 0.10	+
	+
Testing:	Aneroid pressure
<b>5</b>	hPa : 1700
Rated speed rpm : 650	Rated speed rpm : 750
	Del. quantity
rack travel mm : 4.70 Tolerance mm : + 0.10	
roterance min : The U. IU	- cm3/1000 strokes : 230.0
made Assertable 2 22	+ Tolerance
rack travel mm : 2.00	+ cm3/1000 strokes : $+$ 3.0

Check tolerance cm3/1000S.	: +- 6.0
rack travel mm Tolerance mm	: 14.05 : + 0.15
Aneroid pressure	•
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 86.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 4.0
STARTING FUEL DELI	
Rated speed rpm rack travel mm	: 100 : 20.50
Tolerance mm	: + 0.50
Del. quantity cm3/1000 strokes	: 135.0
Tolerance cm3/1000 strokes	: <b>←</b> 15.0
Check tolerance cm3/1000s.	: + 19.0
LOW IDLE	
Rated speed rpm	: 650
Rack travel in mm Tolerance mm	: 4.70 : + 0.10
Del. quantity cm3/1000 strokes	: 23.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s.	: +- 6.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.07.98 Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump

Pump designation : PES6P100B321RS3388 EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A694

Governer no. : 0 421 833 617

Cust. part No. : 51.11103-7606

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

# Start of delivery blocking

Tolerance : + 0.10

Check

tolerance °NW

: **←** 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 925

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Rack travel in mm : 13.90 Tolerance mm : +- 0.05
Del. quantity cm3/1000 strokes : 169.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 4.0
Spreed
Tolerance cm3/1000 strokes : 4.0
Check tolerance cm3/1000s. : 6.0
Rated speed rpm : 400
Rack travel in mm: 4.80 Tolerance mm: + 0.10
Del. quantity cm3/1000 strokes : 25.0
Tolerance om3/1000 strokes : +- 3.0
Check tolerance cm3/1000S. : +- 6.0 Spreed
Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000s. : 5.5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR
GUIDE SLEEVE POSITION
control lever position degree : - 3 Rated speed rpm : 800
Rack travel in mm : 0.50 Tolerance mm : + 0.20
governor spring pre-tension click setting x : 5.50

FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 925 : 1500 : 169.0
CONTROL LEVER	
control lever position degree tolerance degree	
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.10 : 1175 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1260 : + 15
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1400
rack travel mm Rated speed rom Tolerance 1/min	: 4.00 : 1265 : + 15

# LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : + 0.10

# Testing:

Rated speed rpm	: 400
rack travel mm	: 4.80
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 500
Tolerance 1/min	: + 30

TORQUE CONTROL			
Rated speed rpm	:		925
rack travel mm	:		13.90
Tolerance mm	:	+-	0.05

Rated speed rpm	:	1125
rack travel mm	:	13.10
Tolerance mm	:	+- 0.10

Rated speed rpm	:		700
rack travel mm	:		14.00
Tolerance mm	:	+-	0.10

Rated speed rpm	:	1000
rack travel mm	:	13.70
Tolerance mm	:	→ 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	:	500
Pressure hPa	:	1500
rack travel mm	:	14.00
Tolerance mm	:	+ 0.10

Rated speed rpm	:	500
Pressure hPa	:	_
rack travel mm	:	9.50
Tolerance mm	: +	- 0.20

# **MEASUREMENT**

Rated speed	rpm	:	500
-------------	-----	---	-----

Pressure hPa	:	150
rack travel mm	:	10.00
Tolerance mm	: +	-0.05

Pressure hPa	:	800
rack travel mm	:	13.20
Tolerance mm	: +	- 0.15

# FUEL DELIVERY CHARACTERISTICS

Anerota pressure		
hPa	:	1500
Rated speed rpm	:	1125
Del. quantity		

Del. quantity cm3/1000 strokes : 146.5 Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

# Aneroid pressure

:	1	500
:		700
:		14.00
:	+-	0.10
:		184.0
:	+-	3.0
:	+-	6.0
	•	:

# Aneroid pressure

## STARTING FUEL DELIVERY

Rated speed rpm rack travel mm Tolerance mm	:	+-	100 9.50 0.20
Del. quantity cm3/1000 strokes Tolerance	:		112.0
cm3/1000 strokes Check tolerance	:	+-	10.0
cm3/1000s.	:	+-	14.0

# LOW IDLE

Rated	speed	rpm	:	400
-------	-------	-----	---	-----

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes	:	25.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s. Spreed	·: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	3.5
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.07.98 Test oil : ISO 4113

Combination No. : 0 402 646 649

Injection pump

Pump designation : PE6P130A720RS7339 EP type number : 0 412 636 833

Governor

Governor design. : RQV300...950PA905-1

Governer no. : 0 421 814 097

Cust. part No. :

Customer-spec. information Customer : IVECO-AIFO

Motor : 8210.SRI Power KW : 353.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 14.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-50-120-180-240 Phasing

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 338.0

	+ Rated speed rpm : 720
Tolerance	+ guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 4.94 Tolerance mm : + 0.25
Check tolerance	+ U.S
cm3/1000s. : +- 4.0	Rated speed rpm : 1260 guide sleeve
Spreed	+ travel mm : 11.50
	+ Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : 8.0	CUITAE SI EENE DOCITION
Check tolerance	GUIDE SLEEVE POSITION
cm3/1000s. : 12.0	Rated speed rpm : 1090
**************************************	Rack travel in mm: 12.90
	→ Tolerance mm : ← 1.30
Rated speed rpm : 300	†
Rack travel in mm : 4.70	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10	+
Del. quantity	+ Rated speed rpm : 950
cm3/1000 strokes : 24.0	+ Aneroid pressure
Tolerance cm3/1000 strokes : +- 3.0	+ hPa : 1000 + Del. quantity
Check tolerance	+ cm3/1000 strokes : 338.0
cm3/1000s. : +- 7.0	+ Tolerance
Spreed	+ cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 6.0 Chack tolerance	+ cm3/1000s. : + 4.0 - Spreed
cm3/1000s. : 10.0	+ Tolerance
	+ cm3/1000 strokes : 8.0
	+ Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ cm3/1000s. : 12.0
WITH GOVERNOR	Ī
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Data damanda a 4000	†
Rated speed rpm : 1000 guide steeve	t control lever
travel mm : 7.75	<pre>position degree : 114.0 tolerance degree : + 4.0</pre>
travel mm : 7.75 Tolerance mm : + 0.15	+
	+ RATED SPEED
Rated speed rpm : 300	+ rack travel mm : 12.90
guide sleeve travel mm : 1.81	+ Rated speed rpm : 995 + Tolerance 1/min : +- 5
Tolerance mm : + 0.20	Total ance minimis.
, , , , , , , , , , , , , , , , , , ,	+ rack travel mm : 4.00
Rated speed rpm : 409	+ Rated speed rpm : 1115
guide sleeve	+ Tolerance 1/min : +- 15
travel mm : 2.86 Tolerance mm : +- 0.25	rack travel mm : 0.50
roter and the U.C.	+ Tolerance mm : + 0.50
Rated speed rpm : 459	+ Rated speed rpm : 1200
guide sleeve	+
travel mm : 3.29	†
Tolerance mm : +- 0.25	†

#### LOW IDLE

control lever

position degree : 65.0 tolerance degree : + 4.0

Setting point w/out bumper spring

200 Rated speed rpm :

CRT mm min. : > 6.20

Testing:

Rated speed rpm : 300 rack travel mm : 4.70 : - 0.10 Tolerance mm

Rated speed rpm : 430

TORQUE CONTROL

rack travel mm : 950
Tolerance mm : **←** 0.05 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500 Pressure hPa : 1000 rack travel mm : 13.95 Tolerance mm : + 0.05

: 500 Rated speed rpm Pressure hPa : 10.25 rack travel mm : + 0.15 Tolerance mm

**MEASUREMENT** 

Rated speed rpm 500

Pressure hPa 350 rack travel mm : 10.75 Tolerance mm : + 0.10

Pressure hPa : 520 rack travel mm : 12.95 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check

speed 1/min :> 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

500 Rated speed rpm : Del. quantity

cm3/1000 strokes : 196.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : <del>←</del> 4.0

#### STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

100 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

: +- 24.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 4.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 24.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance

cm3/1000s. : +- 7.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.98 Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump

Pump designation : PE6P12DA32DRS7412 EP type number : 0 412 626 953

Governor

Soverner design. : RGV275...1000FA1381K

Governer no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer—spec. information Customer : DAF Motor : XF 250 Power KW : 250.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Rack travel in mm : 11.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : ← 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.35 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 245.0

F15

+	Rated speed rpm : 1282
Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 12.00
Check tolerance	Tolerance mm : +- 0.25
cm3/1000s. : $\leftarrow$ 4.0	Rated speed rpm : 1370 guide sleeve
Spreed	travel mm : 13.50 Tolerance mm : + 0.50
Tolerance	Totelance min . +- U.Ju
cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION
Check tolerance	GOIDE SEELVE TOSTITON
cm3/1000s. : 9.0	Rated speed rpm : 1263
	Rack travel in mm : 10.50
+	Tolerance mm : +- 1.30
Rated speed rpm : 275	
Rack travel in mm: 5.20 + Tolerance mm: + 0.10	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	Rated speed rpm : 980
cm3/1000 strokes : 13.5	Aneroid pressure
Tolerance	hPa : 1500
cm3/1000 strokes : + 3.0 +	Del. quantity
Check tolerance +	cm3/1000 strokes : 245.0
cm3/1000s. : +- 6.0	Tolerance cm3/1000 strokes : + 1.0
Spreed + Tolerance +	Check tolerance
cm3/1000 strokes : 8.0	cm3/1000s. : +- 4.0
Check tolerance +	Spreed
cm3/1000s. : 12.0 +	Tolerance
+	cm3/1000 strokes : 5.0
(B) SETTING OF INJECTION PUMP	Check tolerance cm3/1000s. : 9.0
WITH GOVERNOR	CIIS/ (0005 7.5
+	
GUIDE SLEEVE TRAVEL	CONTROL LEVER
D. 1 . 1	and the last
Rated speed rpm : 1055 + guide sleeve +	control lever position degree : 110.0
travel mm : 7.47	tolerance degree : +- 4.0
Tolerance mm : + 0.15	total and acgree . 4.0
+	RATED SPEED
Rated speed rpm : 275	rack travel mm : 10.50
guide sleeve + travel mm : 2.04 +	Rated speed rpm : 1045 Tolerance 1/min : +- 5
Tolerance mm : + 0.20	Tolerance 1/min : +- 5 Check
Total aree finn	speed 1/min : +- 10
Rated speed rpm : 820	
guide sleeve +	rack travel mm : 4.00
travel mm : 5.14	Rated speed rpm : 1130
Tolerance mm : + 0.25	Tolerance 1/min : +- 15 Check
Rated speed rpm : 480	speed 1/min : +- 20
guide sleeve	oposa rrmin
travel mm : 3.34 +	rack travel mm : 0.70
Tolerance mm : + 0.25	Tolerance mm : + 0.70
+	Rated speed rpm : 1275

# LOW IDLE

control lever

position degree : 74.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. :>8.30

Testing:

Rated speed rpm : 275
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980 rack travel mm : 11.35 Tolerance mm : + 0.10

Rated speed rpm : 900 rack travel mm : 11.50 Tolerance mm : + 0.10

Rated speed rpm : 750 rack travel mm : 11.85 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 11.75 Tolerance mm : +- 0.10

Rated speed rpm : 600 rack travel mm : 11.30 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 10.90 Tolerance mm : +- 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

## **SETTING**

Rated speed rpm : 775 Pressure hPa : 1500 rack travel mm : 11.85 Tolerance mm : + 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 775

Pressure hPa : rack travel mm : 8.30
Tolerance mm : + 0.10

Pressure hPa : 250 rack travel mm : 9.30 Tolerance mm : +- 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure : 1500 Rated speed rpm : 750 rack travel mm : 11.85 Tolerance mm :  $\leftarrow$  0.05 Cel. quaritity cm3/1000 strokes : 283.0 Tolerance cm3/1000 strokes : +- 2.0Check tolerance : **←** 6.0 cm3/1900s. Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. 15.0

Aneroid pressure hPa Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 188.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance 15.0 cm3/1000s.

# LOW IDLE

Rated speed rpm	:		275
	:		5.20
Tolerance mm	:	+-	0.10
Del. quantity			
cm3/1000 strokes	:		13.5
Tolerance			
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+-	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/100Gs.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.07.98 Test oil : ISO 4113

Combination No. : 0 402 646 706

Injection pump

Pump designation : PE6P120A320LS7929 EP type number : 0 412 626 978

Governor

Governer design. : R@300/1050P#1395 Governer no. : 0 421 801 837

Cust. part No. : 0280745602

Customer-spec. information

Customer : MB-NFZ Motor : OM441LA Power KW : 218.0

: OM441LA - EURO I

: 218.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar  $: \leftarrow 0.1$ 

Tolerance l/h:  $\leftarrow$  5.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance im : :- 1.00

Firing order : 6- 3- 5- 2- 4-

: 1

Phasing : 0- 60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °N₩ : + 0.75

Barrel no. : 6

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.30 Tolerance mm : +- 0.10

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Del. quantity cm3/1000 strokes : 197.0 +	
	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1158
Check tolerance cm3/1000s. : + 2.0	Rack travel in mm : 11.00 Tolerance mm : +- 1.30
Spreed	FULL LOAD DELIVERY AT FULL LOAD
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1050 Aneroid pressure
Check tolerance cm3/1000s. : 9.0	hPa : 1000 Del. quantity
	cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : +- 1.0
Rack travel in mm : 6.00 + Tolerance mm : + 0.10 +	Check tolerance cm3/1000s. : +- 2.0 Spreed
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0
WITH GOVERNOR	cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	COAPTOOL LEVED
Rated speed rpm : 1108	CONTROL LEVER
guide steeve travel mm : 6.38 Tolerance mm : + 0.15	control lever position degree : 92.0 tolerance degree : +- 4.0
Rated speed rpm : 300 guide sleeve	RATED SPEED rack travel mm : 11.30
travel mm : 1.70 + Tolerance mm : + 0.20	Rated speed rpm : 1100 Tolerance 1/min : +- 5
Rated speed rpm : 1050 guide sleeve	rack travel mm : 4.00 Rated speed rpm : 1175
travel mm : 6.00 + Tolerance mm : + 0.10 +	Tolerance 1/min : +- 10
Rated speed rpm : 415 + guide sleeve +	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
travel mm : 4.47 Tolerance mm : + 0.10	·
Rated speed rpm : 510 guide sleeve	LOW IDLE
travel mm : 6.00 Tolerance mm : + 0.10	
Rated speed rpm : 1280 - guide sleeve	control lever position degree : 73.0 tolerance degree : +- 4.0
travel mm : 11.50 + Tolerance mm : +- 0.50	Setting point w/out bumper sprin

STOP

Rated speed rpm	: 200	<u></u>
CRT mm min.	: > 8.20	Aneroid pressure
Testing:		hPa : 1000 Rated speed rpm : 600
Rated speed rpm	: 300	+ Del. quantity + cm3/1000 strokes : 203
rack travel mm Tolerance mm	: 6.00 : +- 0.10	Tolerance cm3/1000 strokes : +- 3
rack travel mm		Check tolerance cm3/1000S. : + 6
Rated speed rpm Tolerance 1/min	: 405	Spreed
Toterance Tymin	: +- 20	Tolerance cm3/1000 strokes : 8
TORQUE CONTROL		
Rated speed rpm	: 1050 : 12.30	†
rack travel mm Tolerance mm	: + 0.10	rack travel mm : 12.
Rated speed rpm		† Tolerance mm : + 0.0
rack travel mm Tolerance mm		Aneroid pressure
		+ hPa : -
Rated speed rpm	: 1050 : 12.55	Rated speed rom : 500
rack travel mm Tolerance mm	: 12.55 : + 0.05	+ Del. quantity + cm3/1000 strokes : 138
TOCCI GITICO TIRII		† Tolerance
ANEROTE /AL TITLING		
ANEROID/ALTITUDE COMPENSATOR TEST		+ Check tolerance + cm3/1000S. : +- 2 + Spreed
		+ Tolerance
SETTING		cm3/1000 strokes : 8
Rated speed rpm		+
Pressure hPa rack travel mm	: 1000 : 12.30	+ STARTING FUEL DELIVERY
Tolerance mm	: <b>←</b> 0.10	+
Rated speed rpm	: 500	+ Rated speed rpm : 100 + Del. quantity
Pressure hPa	: -	+ cm3/1000 strokes : 190
rack travel mm Tolerance mm	: 10.20 : +- 0.10	+ Tolerance + cm3/1000 strokes : +- 10
MEASUREMENT		+ Check tolerance + cm3/1000S. : +- 15
Rated speed rpm	: 500	‡
Pressure hPa	: 350	<u> </u>
rack travel mm	: 10.60	LOW IDLE
Tolerance mm	: ← 0.05	1
Pressure hPa	: 600	Rack travel in mm: 6.
rack travel mm	: 11.80	Tolerance mm : +- 0.
	<u> </u>	+
Tolerance mm	: +- 0.10	1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.07.98 Test oil : ISO 4113

Combination No. : 0 402 648 700

Injection bump

Pump designation : PE8P120A320LS7910 EP type number : 0 412 628 924

Governor

Governer design. : RQV350...1050PA1338

Governer no. : 0 421 814 192

Cust. part No. : 027 074 5302

Customer-spec. information

Customer : MB-NFZ
Motor : OM442A Euromot
Power KW : 250.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. L/h : 265 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter:

x length mm : 1000

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : +- 0.50

Check

tolerance NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

# BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm: 12.80 Tolerance mm : + 0.05

4	quide sleeve
Del. quantity cm3/1000 strokes : 194.0	travel mm : 3.60 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1197 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 10.00 Tolerance mm : + 0.25
Spreed	Rated speed rpm : 1290 guide sleeve
Tolerance cm3/1000 strokes : 5.0	travel mm : 11.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : 9.0	GUIDE SLEEVE POSITION
	, antmal layer
1	control lever  position degree : - 3
Rated speed rpm : 350	Rated speed rpm : 1161
Rack travel in mm: 5.20	- Rack travel in mm : 12.20
Tolerance mm : + 0.10	Tolerance mm : +- 1.30
Del. quantity + cm3/1000 strokes : 19.0 +	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : + 3.0 + Check tolerance	- Rated speed rpm : 1030
cm3/1000s. : +- 6.0	Aneroid pressure
Spreed	hPa : 1200
Tolerance + cm3/1000 strokes : 8.0 +	Del. quantity cm3/1000 strokes : 194.0
Check tolerance	Tolerance
cm3/1000s. : 12.0	cm3/1000 strokes : +- 1.0 Check tolerance
<del>-</del>	cm3/1000s. : ÷ 4.0
(B) SETTING OF INJECTION PUMP	Spreed
WITH GOVERNOR	Tolerance cm3/1000 strokes : 5.0
	Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : 9.0
Rated speed rpm : 1107	
guide sleeve + travel mm : 8.18 +	CONTROL LEVER
Tolerance mm : + 0.15	COLUNC LEVER
750	control lever
Rated speed rpm : 350 + guide sleeve + -	position degree : 120.0 tolerance degree : +- 4.0
travel mm : 2.02	
Tolerance mm : + 0.20	RATED SPEED
Rated speed rpm : 890	rack travel mm : 11.80 Rated speed rpm : 1095
guide sleeve	Tolerance 1/min : + 5
travel mm : 5.70 + Tolerance mm : + 0.25	rack travel mm : 4.00
TOTAL CHILD IN THE U.E.S	Rated speed rpm : 4.00
Rated speed rpm : 560	Tolerance 1/min : +- 15
•	

rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.85 : 1200
LOW IDLE	
control lever position degree tolerance degree	: 70.0 : + 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.70
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm	: 400 : 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1030 : 12.80 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.40 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 825 : 13.15 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 590 : –
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 250 : 0.35 : + 0.05
Pressure hPa	: 400

rack travel mm Tolerance mm	: 1.75 : +- 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHAP	RACTERISTICS
Aneroid pressure	: 1200
Rated speed rpm Del. quantity	: 700
cm3/1000 strokes Tolerance	: 210.0
cm3/1000 strokes Check tolerance	0.5
cm3/1000s. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
rack travel mm Tolerance mm	: 13.15 : + 0.05
Aneroid pressure	
Rated speed rpm Del. quantity	500
cm3/1000 strokes Tolerance	: 137.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
STARTING FUEL DEL	
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes	: 210.0

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance

cm3/1000s. : + 14.0

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.20
Tolerance mm: +- 0.10
Del. quantity
cm3/1000 strokes: 19.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.07.98 Test oil : ISO 4113

Combination No. : 0 402 676 817

Injection pump

Pump designation : PE6P120A720RS7188

: -10

EP type number : 0 412 626 924

Governor

Governer design. : RSV350...1050P1A543

Governer no. : 0 421 833 426

Cust. part No. : 1355270

Customer-spec. information Customer : SCANIA : DS1166 A Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C · <del>- 2</del>.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Overflow quantity min. L/h : 205
Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

# Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

+	<del> </del>
BASIC SETTING -	- CONTROL LEVER
Del. quantity cm3/1000 strokes : 212.0	- control lever - position degree : 67.0 - tolerance degree : +- 4.0
olerance m3/1000 strokes : +- 1.0	control lever position degree : 117.0
heck tolerance m3/1000s. : +- 4.0	tolerance degree : + 4.0
preed:	- RATED SPEED - rack travel mm : 11.50 - Rated speed rpm : 1095
olerance m3/1000 strokes : 8.0 -	Tolerance 1/min : +- 5 Check
heck tolerance m3/1000s. : 12.0 -	speed 1/min : + 10 rack travel mm : 4.00
	Rated speed rpm : 1170 Tolerance 1/min : +- 15 Check
ated speed rpm : 350	speed 1/min : + 20
ack travel in mm : 4.70 - olerance mm : +- 0.10 - el. quantity	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
m3/1000 strokes : 19.0 - plerance -	Nated speed (pill : 1355
n3/1000 strokes : + 3.0 neck tolerance n3/1000s. : + 6.0	LOW IDLE
preed	
m3/1600 strokes : 4.0 - heck tolerance - m3/1000s. : 8.0 -	- control lever - position degree : 81.0 - tolerance degree : +- 4.0
	- control lever
B) SETTING OF INJECTION PUMP  ITH GOVERNOR	position degree : 31.0 tolerance degree : + 4.0
	Setting point w/out bumper spring
JIDE SLEEVE POSITION	Rated speed rpm : 350 rack travel mm : 4.20 Tolerance mm : +- 0.10
ontrol lever osition degree : - 3 ated speed rpm : 800	- Rated speed rpm : 100
ack travel in mm: 0.50	CRT mm min. : > 19.50
olerance mm : +- 0.20 -	Testing:
overnor spring re-tension lick setting x : 6.00	- Rated speed rpm : 350 - rack travel mm : 4.70 - Tolerance mm : +- 0.10
-	rack travel mm : 2.00

Rated speed rpm : 480 Tolerance 1/min : +- 30 TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 12.55 Tolerance mm : + 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1500
rack travel mm : 12.55
Tolerance mm : + 0.05 Rated speed rpm : 500 Pressure hPa : rack travel mm : 10.00
Tolerance mm : + 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa : 520 rack travel mm : 11.20 Tolerance mm : + 0.15 Fressure hPa : 700 rack travel mm : 12.05 Tolerance mm :  $\leftarrow$  0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 197.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance : +- 6.0 cm3/1000s. Aneroid pressure Rated speed rpm : 500

Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 10.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 145.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm : 4.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : + 3.0Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0

# End of test specification sheet

Del. quantity

cm3/1000 strokes : 136.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.07.98 Test oil : 180 4113

Combination No. : 0 402 676 833

Injection pump

Pump designation : PE6P120A320RS7426 EP type number : 0 412 626 958

Governor

Governer design. : RSV300...1100P1A650

Governer no. : 0 421 833 567

Cust. part No. : 3826502 P04 v.06/97

Customer-spec. information Customer : PENTA

Motor : TWD 1031 VE Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

: 40 temp. °C Temp. 10 : 40 : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity
min. L/h : 300
Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 7.40Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Barrel no.	: 1
BASIC SETTING	
Rated speed rpm	: 1050
Rack travel in mm Tolerance mm	: 12.00 : +- 0.05
Del. quantity cm3/1000 strokes	: 292.0
Toterance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	denti (refletti) araşı dağışını təllinə. Addensanının i şaşalıdı araşı, sanı
Tolerance cm3/1000 strokes	: 7.0
Check tolerance cm3/1000s.	: 11.0
Rated speed rpm	: 300
Rack travel in mm Tolerance mm	: 4.60 : + 0.10
Del. quantity cm3/1000 strokes	: 22.0
Tolerance cm3/1000 strokes	: <del>+</del> 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
	: 5.0
Check tolerance cm3/1900s.	: 8.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP

control lever position degree Rated speed rpm	: - 3 : 800
Rack travel in mm Tolerance mm	: 0.50 : + 0.20
governor spring pre-tension click setting x	: 4.25
FULL LOAD DELIVER	TY AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 1050
hPa	: 1500
Del. quantity cm3/1000 strokes	: 292.0
Tolerance	
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 7.0
Check tolerance	
cm3/1000s.	: 11.0
CONTROL LEVER	
CONTROL LEVER  control lever position degree tolerance degree	: 55.0 : +- 4.0
control lever position degree tolerance degree control lever	: +- 4.0
control lever position degree tolerance degree control lever position degree	: +- 4.0 : 107.0
control lever position degree tolerance degree control lever	: +- 4.0 : 107.0
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED	: +- 4.0 : 107.0 : +- 4.0
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm	: +- 4.0 : 107.0 : +- 4.0 : 11.00
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125 : +- 15 : 0.85
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min Tolerance 1/min	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125 : +- 15
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance 1/min rack travel mm Tolerance mm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125 : +- 15 : 0.85 : +- 0.55
control lever position degree tolerance degree control lever position degree tolerance degree RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance 1/min rack travel mm Tolerance mm	: +- 4.0 : 107.0 : +- 4.0 : 11.00 : 1080 : +- 5 : 4.00 : 1125 : +- 15 : 0.85 : +- 0.55

LOW IDLE

control lever position degree : 73.0 tolerance degree : +- 4.0	
control lever position degree : 23.0 tolerance degree : + 4.0	
Serting point w/out bumper spring	
Rated speed rpm : 300 rack travel mm : 4.10 Tolerarice mm : + 0.10	
Testing:	
Rated speed rpm : 300 rack travel mm : 4.50 Tolerance mm : + 0.10	
rack travel mm : 2.00 Rated speed rpm : 360 Tolerance 1/min : +- 30	
TORQUE CONTROL Rated speed rpm : 1050 rack travel mm : 12.00 Tolerance mm : + 0.05	_
Rated speed rpm : 700 rack travel mm : 12.00 Tolerance mm : + 0.10	
ANEROID/ALTITUDE COMPENSATOR TEST	_
SETTING	
Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.00 Tolerance mm : + 0.10	
Rated speed rpm : 500 Pressure hPa : - rack travel mm : 7.40 Tolerance mm : + 0.20	
MEASUREMENT	
Rated speed rpm : 500	
Pressure hPa : 840 rack travel mm : 3.90 Tolerance mm : + 0.20	

Pressure hPa	:	220
rack travel mm	:	0.25
Tolerance mm	: +-	0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm Del. quantity	•	1500 700
cm3/1000 strokes	:	328.0
Tolerance		+- 3.0
cm3/1000 strokes Check tolerance	•	<del>-</del> 3.0
cm3/1000s.	:	+- 6.0
Spreed Tolerance		
cm3/1000 strokes	:	9.0
Check tolerance cm3/1000s.		13.0
CIID/ 10003.	•	13.0

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		188.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0

# LOW IDLE

Rated speed rpm	:		300
Rack travel in mm Tolerance mm	:	+-	4.60 0.10
Del. quantity cm3/1000 strokes	:		22.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.07.98 Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump

Pump designation : PES6P120A120RS7390 EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1244K

Governer no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information Customer : CUMMINS Motor Motor : 6CTAA Power KW : 179.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 90
Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.70 Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

	:
Rack travel in mm : 13.70	Rated speed rpm : 420
Tolerance mm : +- 0.05	guide sleeve
roter arice likii	travel mm : 4.28
Del. quantity	+ Tolerance mm : + 0.25
cm3/1000 strokes : 173.0	
	Rated speed rpm : 1380
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 13.50
	+ Tolerance mm : + 0.50
Check tolerance	+
cm $3/1000$ s. : $\leftarrow$ 4.0	CUTAT OF COURTS
Commence of the commence of th	+ GUIDE SLEEVE POSITION
Spreed	†
Tolerance	T control lever
cm3/1000 strokes : 5.0	position degree : - 1
CIID/ 1000 Strokes . J.O	Rated speed rpm : 1195
Check tolerance	Traced opeca Toll . 1175
cm3/1000s. : 9.0	Rack travel in mm: 12.00
	+ Tolerance mm : +- 2.00
	+
Rated speed rpm : 350	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Book Annual Samuel E 40	T P And as allows 4400
Rack travel in mm: 5.10	+ Rated speed rpm : 1100
Tolerance mm : + 0.10	+ Aneroid pressure + hPa : 1500
Del. quantity cm3/1000 strokes : 18.0	+ hPa : 1500 + Del. quantity
Tolerance	cm3/1000 strokes : 1/3.0
cm3/1000 strokes : +- 3.0	Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0
cm3/1000s. : +- 5.0	- Check tolerance
Spreed	+ cm3/1000s. : $+$ 4.0
Tolerance	Spreed
cm3/1000 strokes : 7.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 11.0	+ Check tolerance
	+  cm3/1000S. : 9.0
	†
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	T
WITH GOVERNOR	CONTROL LEVER
	I CONTROL EEVER
GUIDE SLEEVE TRAVEL	- control lever
	position degree : 68.0
Rated speed rpm : 1159	+ tolerance degree : +- 4.0
guide sleeve	+
travel mm : 10.27	+ control lever
Tolerance mm : +- 0.15	+ position degree : 122.0
700	tolerance degree : + 4.0
Rated speed rpm : 350	T DATES COFFEE
guide sleeve	+ RATED SPEED
travel mm : 1.93 Tolerance mm : +- 0.20	+ rack travel mm : 12.70 + Rated speed rpm : 1145
TOTEL BLICE INIT	Tolerance 1/min : +- 5
Rated speed rpm : 710	Total dice 1/11(11) . The same of the same
guide steeve	rack travel mm : 4.00
travel mm : 5.79	+ Rated speed rpm : 1245
Tolerance mm : + 0.25	+ Tolerance 1/min : + 15
	·

Check		+	
speed 1/min	: + 20		rpm : 700
rack travel mm	: 0.50	Pressure hPa	: - nm : 10.70
Tolerance mm	: <b>←</b> 0.50	+ Tolerance mm	: +- 0.20
Rated speed rpm	: 1350	+ MEASUREMENT	
		Rated speed	rpm : 700
		+	•
LOW IDLE		Pressure hPa rack travel of Tolerance mm	
control lever position degree	· 74 በ	Pressure hPa	: 600
tolerance degree	: +- 4.0	+ rack travel	nm : 13.30 : +- 0.05
control lever		+	
position degree	: 20.0	Chart intant	
tolerance degree	: +- 4.0	+ Start interl	CK
Setting point w/ou		Rated speed Rated speed	
Rated speed rpm	: 250	+ Check	
CRT mm min.	: > 7.50	speed 1/min Check	: > 80
Testing:		speed 1/min	: < 300
Rated speed rpm	: 350	Į ———	<del></del>
rack travel mm Tolerance mm	: 5.10	FUEL DELIVER	CHARACTERISTICS
Rated speed rpm	• 350	+ Aneroid pres	CLIPA
natta speca i pii	. 330	+ hPa	: 1500
TOROUE CONTROL			rpm : 700
TORQUE CONTROL Rated speed rpm	: 1100	+ Del. quantity	/ okes : 171.0
	: 13.70	+ Tolerance	
Tolerance mm	: +- 0.05		okes : + 3.0
Rated speed rpm	. 700	+ Check tolera	nce : <del>+-</del> 6.0
rack travel mm	: 13.85	Spreed	0.0
rack travel mm Tolerance mm	: +- 0.10	+ Tolerance	
Dated aread non			okes : 8.0
Rated speed rpm		+ Check tolera	nce
Rated speed rpm rack travel mm Tolerance mm			nce
Rated speed rpm rack travel mm Tolerance mm		Check toleral cm3/1000s.	nce : 12.0
Rated speed rpm rack travel mm Tolerance mm  ANEROID/ALTITUDE		check toleral cm3/1000s.	nce : 12.0 
		check toleral cm3/1000s.	nce : 12.0
ANEROID/ALTITUDE		rack travel of Tolerance mm	nce : 12.0 nm : 12.95 : ← 0.15
ANEROID/ALTITUDE		rack travel of Tolerance mm	12.0 . 12.95 . + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST SETTING	: 500 : 12.95 : + 0.15	rack travel of Tolerance mm	: 12.0  in 12.95 : + 0.15  sure : -  rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa	: 500 : 12.95 : + 0.15 	rack travel of Tolerance mm	: 12.0  nm : 12.95 : + 0.15  sure : - pm : 500
ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa rack travel mm	: 500 : 12.95 : + 0.15 : 700 : 1500 : 13.85	cm3/1000s.  rack travel of the track tra	12.0  12.95  12.95  10.15  12.95  10.15
ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm Pressure hPa	: 500 : 12.95 : + 0.15 : 700 : 1500 : 13.85	cm3/1000s.  rack travel of the track tra	: 12.0  nm : 12.95 : + 0.15  sure : - pm : 500

Check tolerance : +- 4.0 cm3/1000s.

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 190.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

: +- 24.0 cm3/1000s.

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.10 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 5.0 Spreed

Tolerance

cm3/1000 strokes :

7.0

Check tolerance

cm3/1000s. 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.98 Test oil : ISO 4113

Combination No. : 0 402 746 606

Injection pump

Pump designation : PES6P110A720RS7406 EP type number : 0 412 716 810

Governon

Governer design. : RQV300...1050PA1090

: -1K

Governer no. : 0 421 815 497

Cust. part No. : 9279607

Customer—spec. information
Customer : LIEBHERR
Motor : D 926 TI-E
Power KW : 230.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 125 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 205.0

Tolerance

cm3/1000 strokes : +- 1.0

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Check tolerance cm3/1000s. : +- 4.0	‡
Spreed	+ GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1180
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 12.80 Tolerance mm : +- 2.00
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 1050 Aneroid pressure hPa : 1600
cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : + 3.0	+ Del. quantity + cm3/1000 strokes : 205.0 + Tolerance
Check tolerance cm3/1000s. : + 6.0	+ cm3/1000 strokes : + 1.0 + Check tolerance
Spreed Tolerance	+ cm3/1000s. : + 4.0 + Spreed
cm3/1000 strokes : 6.0 Check tolerance cm3/1000S. : 10.0	Tolerance cm3/1000 strokes : 5.0 Check tolerance
	cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	t control lever + position degree : 116.0
Rated speed rpm : 1117 guide sleeve	tolerance degree : +- 4.0
travel mm : 10.27 Tolerance mm : +- 0.15	+ RATED SPEED + rack travel mm : 12.80 + Rated speed rpm : 1090
Rated speed rpm : 350 guide sleeve	+ Tolerance 1/min : + 5
travel mm : 1.86 Tolerance mm : + 0.20	rack travel mm : 4.00 Rated speed rpm : 1195 Tolerance 1/min : +- 15
Rated speed rpm : 756 guide sleeve travel mm : 6.17	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Tolerance mm : + 0.25	Rated speed rpm : 1300
Rated speed rpm : 480 guide sleeve travel mm : 3.75	‡
Tolerance mm : + 0.25	LOW IDLE
Rated speed rpm : 1330 guide sleeve travel mm : 13.50	control lever 71.0
Tolerance mm : + 0.50	tolerance degree : +- 4.0

Setting point w/o	uit himner spring	+ Pressure hPa : 670 + rack travel mm : 11.50
<u>-</u> .		Tolerance mm : + 0.10
Rated speed rpm	: 250	‡
CRT.mm min.	: > 7.40	FUEL DELIVERY CHARACTERISTICS
Testing:		
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: 5.20 : +- 0.10	Aneroid pressure  hPa : 1600  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 194.0  Tolerance
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.80	
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm Tolerance mm	: 500 : 10.90 : ← 0.15	Aneroid pressure  hPa : 1600  Rated speed rpm : 800  Tolerance mm : + 0.15  bel. quantity  cm3/1000 strokes : 207.0  Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 13.35	cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.45 : +- 0.15	Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa Tolerance mm	: 1050	STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 10.60 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 175.0
MEASUREMENT		+ Tolerance - cm3/1000 strokes : +- 10.0
Rated speed rpm	: 1050	+ Check tolerance + cm3/1000s. : +- 14.0
Pressure hPa rack travel mm Tolerance mm	: 13.00	LOW IDLE

Rated speed rpm	:	350
Rack travel in mm Tolerance mm Del. quantity	: ←	5.20 0.10
cm3/1000 strokes Tolerance	:	25.0
cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s. Spreed	: +	6.0
Tolerance cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	:	10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.07.98 : ISO 4113 Test oil

Combination No. : 0 402 746 606A

Injection pump

Pump designation : PES6P110A720RS7406 EP type number : 0 412 716 810

Governor

Governer design. : RQV300...1050PA1090

: -1K

Governer no. : 0 421 815 497

Cust. part No. : 9279608

Customer-spec. information

Customer : LIEBHERR
Protor : D 926 TIPower KW : 230.0 : D 926 TI-E A3

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 125 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.00 Tolerance mm :  $\leftarrow$  1.00

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 13.80 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 205.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

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Check tolerance cm3/1000S. :	+- 4.0	CHARL CLEENE DOCTATION
Spreed		GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes :	5.0	control lever position degree : - 1 Rated speed rpm : 1180
Check tolerance cm3/1000s. :	9.0	Rack travel in mm : 12.80 Tolerance mm : + 2.00
Rated speed rpm :	350	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : Spread Tolerance cm3/1000 strokes : Check tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	<ul> <li>← 0.10</li> <li>25.0</li> <li>← 3.0</li> <li>← 6.0</li> <li>6.0</li> <li>10.0</li> </ul>	Rated speed rpm : 1050 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
WITH GOVERNOR	‡	CONTROL LEVER
Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	1102 10.05 + 0.15 350 1.86 + 0.20 749 6.11 + 0.25	control lever position degree : 116.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 12.80 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1195 Tolerance 1/min : + 15  rack travel min : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
Rated speed rpm : guide sleeve travel mm : Tolerance mm : guide sleeve travel mm : Tolerance mm : Tolerance mm :	480 3.75 ← 0.25 1330 ← 0.50	LOW IDLE  control lever position degree : 71.0 tolerance degree : + 4.0

Setting point w/out bumper spring
Rated speed rpm : 250
CRT mm min. : > 7.40
Testing:
Rated speed rpm : 350 rack travel mm : 5.20 Tolerance mm : +- 0.10
Rated speed rpm : 420
TORQUE CONTROL Rated speed rpm : 1050 rack travel imm : 13.80 Tolerance mm : + 0.05
Rated speed rpm : 500 rack travel mm : 10.90 Tolerance mm :
Rated speed rpm : 800 Tolerance mm : +- 0.15
Rated speed rpm : 950 rack travel mm : 13.35 Tolerance mm : + 0.10
Rated speed rpm : 600 rack travel mm : 11.45 Tolerance mm : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST
SETTING
Rated speed rpm : 1050 Pressure hPa : 1600 rack travel mm : 13.80 Tolerance mm : + 0.05
Rated speed rpm : 1050 Pressure hPa : - Tolerance mm : +- 0.10
MEASUREMENT
Rated speed rpm : 1050
Pressure hPa : 940 rack travel mm : 13.00 Tolerance mm : +- 0.05

FUEL DELIVERY CHAI	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1600 : 500 : 194.0 : +- 3.0
Check tolerance cm3/1000S.	: +- 6.0
Aneroid pressure hPa Rated speed rpm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1600 : 800 : +- 0.15 : 207.0 : +- 3.0 : +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes	:
STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 100 : 10.60 : +- 0.20

Pressure hPa : 670
rack travel mm : 11.50
Tolerance mm : + 0.10

### LOW IDLE

Rated speed rpm	:		350	
Rack travel in mm Tolerance mm Del. quantity		+-	5.20 0.10	
cm3/1000 strokes	:		25.0	
cm3/1000 strokes	:	+	3.0	
cm3/1000s. Spreed	:	<b>←</b>	6.0	
Tolerance cm3/1000 strokes Check tolerance	:		6.0	
cm3/1000s.	:		10.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 06.07.98 : ISO 4113

Combination No. : 0 402 746 633

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQ300/1050PA1344

Governer no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor : 8460.41R.7143 Power KW : 214.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity
min. l/h : 180
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 20.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.40

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.85 + Tolerance mm : + 0.05 +	Aneroid pressure hPa : 1200 Del. quantity
Pol	cm3/1000 strokes : 226.0
Del. quantity cm3/1000 strokes : 226.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000s. : +- 4.0 Spreed
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Spreed	cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance	control lever
Rated speed rpm : 300  Rack travel in mm : 6.50  Tolerance mm : + 0.10  Del. quantity cm3/1000 strokes : 20.0  Tolerance cm3/1000 strokes : + 3.0  Check tolerance cm3/1000s. : + 6.0  Spreed Tolerance cm3/1000 strokes : 8.0  Check tolerance	position degree : 94.0 tolerance degree : +- 4.0
1	RATED SPEED
Rated speed rpm : 300	rack travel ma : 10.80
+	Rated speed rpm : 1103
Rack travel in mm: 6.50 + Tolerance mm: + 0.10 +	Tolerance 1/min : +- 8 Check
Tolerance mm : + 0.10 + Del. quantity +	speed 1/min : +- 13
cm3/1000 strokes : 20.0	speed it iii ii is
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : +- 3.0 +	Rated speed rpm : 1180
Check tolerance	Tolerance 1/min : + 15
cm3/1000s. : + 6.0 + 5preed	Check speed 1/min : +- 20
Tolerance	Speed (7)((1)
cm3/1000 strokes : 8.0	rack travel mm : 0.50
	Tolerance mm : + 0.50
cm3/1000s. : 12.0 +	Rated speed rpm : 1350
İ	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
‡	LOW IDLE
GUIDE SLEEVE POSITION	control lever
GOTNE SPEECE LOSTITON	position degree : 72.0
+	tolerance degree : +- 4.0
control lever	
position degree : 109	Setting point w/out bumper spring
Rated speed rpm : 500	Rated speed rpm : 200
Rack travel in mm: 20.00	
Tolerance mm : + 0.80	CRT mm min. : > 7.80
FULL LOAD DELIVERY AT FULL LOAD STOP	Testing:
TOLL LOAD DELIVERY AT TOLL LOAD STOP	Rated speed rpm : 300
Rated speed rpm : 1050	rack travel mm : 6.50
+	Tolerance mm : +- 0.10

rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 395 : +- 20
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 11.85 : + 0.05
Rated speed rpm rack travel nm Tolerance mm	: 500 : 13.35 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.25 : + 0.20
Rated speed rpm rack travel mm	: 560 : 13.70
Tolerance mm	: + 0.20
	: <del></del>
Tolerance mm  ANEROID/ALTITUDE	: ← 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
ANEROID/ALTITUDE COMPENSATOR TEST  SETTING Rated speed rpm Pressure hPa rack travel mm	: 600 : 1200 : 13.35
Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm	: 600 : 1200 : 13.35 : ← 0.10 : 600 : − : 9.90
Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 1200 : 13.35 : ← 0.10 : 600 : − : 9.90
Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT	: 600 : 1200 : 13.35 : ← 0.10 : 600 : - : 9.90 : ← 0.20

Check speed 1/min	: > 80				
Check speed 1/min	: < 260				
FUEL DELIVERY CHARACTERISTICS					
Aneroid pressure hFa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes					
Check tolerance cm3/1000S.	: +- 7.0				
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 148.0				
STARTING FUEL DEL	IVERY				
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 11.90 : + 0.30 : 100.0 : + 15.0 : + 19.0				
LOW IDLE					
Rated speed rpm	: 300				
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +- 0.10				

Rated speed rpm : < 250

Rated speed rpm : > 100

Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	6.0
Spreed Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.07.98 Test oil : ISO 4113

Combination No. : 0 400 678 040

Injection pump

Pump designation : PE8A95D410LS2608 EP type number : 0 410 698 988

Governor

Governer design. : RSV300...1325A8c1002

Governer no. : 0 420 232 310

Cust. part No. :

Customer—spec. information Customer : KHD

Motor

: F8L413F

Power KW

: 188.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

mer values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 2.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-8-7-2-6

: - 5- 4- 3

Phasing : 0-45-90-135-180

: -225-270-315 : +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1325

Rack travel in mm: 9.75 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 92.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: <del>←</del> 3.0

Spreed

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Tolerance cm3/1000 strokes : 3.0	+ Check tolerance - cm3/1000S. : 6.0
Check tolerance cm3/1000S. : 6.0	<del> </del>
	CONTROL LEVER
Rated speed rpm : 300	control lever position degree : 113.0 tolerance degree : +- 4.0
Rack travel in mm : 6.00 Tolerance mm : ← 0.10	T RATED SPEED
Del. quantity cm3/1000 strokes : 12.0	rack travel mm : 8.70 Rated speed rpm : 1370
Tolerance cm3/1000 strokes : + 3.0	Tolerance 1/min : + 5
Check tolerance cm3/1000s. : +- 5.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1405 Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : 5.0 Check tolerance	+ rack travel mm : 1.00
cm3/1000s. : 9.0	Tolerance mm : + 0.70 Rated speed rpm : 1575
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	LOW IDLE
GUIDE SLEEVE POSITION	t control lever tolerance degree : 71.0 tolerance degree : + 4.0
control lever position degree : - 3 Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.65	Rated speed rpm : 100
Tolerance mm : +- 0.35	+ CRT mm min. : > 19.00
governor spring pre-tension	Testing:
click setting x : 4.75	Rated speed rpm : 300 rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 1325	rack travel mm : 2.00 Rated speed rpm : 340
Aneroid pressure	Tolerance 1/min : +- 30
Del. quantity cm3/1000 strokes : 92.5	Rated speed rpm : 700
Tolerance cm3/1000 strokes : + 1.0	CRT mm max. : < 1.00
Check tolerance cm3/1000s. : + 3.0	SET IDLE AUXILIARY SPRING
Spreed Tolerance	Rated speed rpm : 700
cm3/1000 strokes : 3.0	TORQUE CONTROL

Rated speed rpm : 1325 rack travel mm : 9.75 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 10.05 Tolerance mm : + 0.05

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.20 Tolerance mm : 4- 0.20 Del. quantity

cm3/1000 strokes : 122.0

Tolerance

cm3/1000 strokes : +- 5.5

Check tolerance

cm3/1000S. : +- 8.5

### LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : 4— 0.10
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 3.0

cm3/1000 strokes : — 3.0 Check tolerance cm3/1000s. : — 5.5

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.07.98 : ISO 4113

Combination No. : 0 400 846 520

Injection pump

Pump designation : PES6A95D410LS2644

EP type number : 0 410 896 924

Governor

Governer design. : RQV250...1100AB1178L

Governer no. : 0 420 212 164

Cust. part No. :

Customer-spec. information Customer : MAN

Motor

: D2566 ME

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5

Tolerance bar : + 1.5

Test lines

: 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

**G25** 

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.55 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Del. quantity cm3/1000 strokes : 125.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.

6.0

Batal aread are 250	1 D.A.d 44/5
Rated speed rpm : 250	+ Rated speed rpm : 1145 + Tolerance 1/min : +- 5
Rack travel in mm: 7.00 Tolerance mm: + 0.10	+ rack travel mm : 4.00
Del. quantity	+ Rated speed rpm : 1190
cm3/1000 strokes : 12.0 Tolerance	+ Tolerance 1/min : +- 15
cm3/1000 strokes : +- 3.0 Check tolerance	rack travel mm : 0.50 + Tolerance mm : +- 0.50
cm3/1000s. : +- 5.5	Rated speed rpm : 1300
Spreed Tolerance	‡
cm3/1000 strokes : 3.5 Check tolerance	İ
cm3/1000s. : 5.0	LOW IDLE
(B) SETTING OF INJECTION PUMP	+ control lever
WITH GOVERNOR	+ position degree : 12.0
	tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
COINC SECTION 1001/1001	Raited speed rpm : 100
control lever position degree : - 1	CRT mm min. : > 8.50
Rated speed rpm : 1125	Testing:
Rack travel in mm: 16.50	Rated speed rpm : 250
Tolerance mm : +- 1.30	+ rack travel mm : 7.00 + Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1100	+ Rated speed rpm : 370 + Tolerance 1/min : + 30
Aneroid pressure	†
hPa : – Del. quantity	<del>-</del>
cm3/1000 strokes : 125.5 Tolerance	Start interlock
cm3/1000 strokes : + 1.0 Check tolerance	+
$cm3/1000s$ . : $\leftarrow$ 3.0	+ Rated speed rpm : > 100 + Rated speed rpm : < 170
Spreed Tolerance	+ Check
cm3/1000 strokes : 3.5 Check tolerance	+ speed 1/min : > 80 + Check
cm3/1000s. : 6.0	speed 1/min : < 190
	<u> </u>
CONTROL LEVER	FUEL DELIVERY CHARACTERISTICS
control lever	Aneroid pressure
position degree : 48.0 tolerance degree : + 4.0	+ hPa : - + Rated speed rpm : 500
	+ Del. quantity
RATED SPEED rack travel mm : 11.00	+ cm3/1000 strokes : 110.5

Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	5.5

Aneroid pressure		
hPa	:	
Rated speed rpm	:	750
Del. quantity		
cm3/1000 strokes	:	114.5
Tolerance		
cm3/1000 strokes	: +	- 1.5
Check tolerance		
cm3/1000s.	: +	- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		14.30
Tolerance mm	:	+-	0.30
Del. quantity			
cm3/1000 strokes	:		126.5
Tolerance			
cm3/1000 strokes	:	+-	5.0
Check tolerance			
cm3/1000s.	:	+-	8.0

## LOW IDLE

Rated speed rpm	:	250	
Rack travel in mm Tolerance mm	: +-	7.00 0.10	
Del. quantity cm3/1000 strokes Tolerance	:	12.0	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	5.5	
Tolerance cm3/1000 strokes	:	3.5	
Check tolerance cm3/1000s.	:	5.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.07.98 : ISO 4113

Combination No. : 0 401 078 002

Injection pump

Pump designation : PE8A100D320RS3009 EP type number : 0 411 008 002

Governor

Governer design. : RSV300...1150A1C489R

Governer no. : 0 420 233 190

Cust. part No. :

Customer-spec. information Customer : MWM : D232-8 Motor

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-8-5-4-7

: - 2- 3- 6

: 0-30-90-120-180 Phasing

: -210-270-300 : **←** 0.50

Check

tolerance °NW : + 0.75

#### BASIC SETTING

Tolerance

Del. quantity cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: + 3.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s. :

6.0

Rated speed rpm : 300	+ Rated speed rpm : 1175 + Tolerance 1/min : +- 5
Rack travel in mm : 6.00	Total diloc limiti
Tolerance mm : + 0.10	rack travel mm : 4.00
Del. quantity	Rated speed rpm : 1215
cm3/1000 strokes : 17.5	
	+ Tolerance 1/min : +- 15
Tolerance	†
cm3/1000 strokes : + 3.0	+ rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : +- 5.5	Rated speed rpm : 1400
Spreed	†
Tolerance	† rack travel mm : 4.00
cm3/1000 strokes : 3.5	+
Check tolerance	+
cm3/1000s. : 5.0	+
	+ LOW IDLE
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+
	+ control lever
	position degree : 25.0
	tolerance degree : + 4.0
GUIDE SLEEVE POSITION	1
	+ Setting point w/out bumper spring
	1 secting points who as bumper spring
control lever	Rated speed rpm : 300
position degree : - 3	
Rated speed rpm : 800	rack travel mm : 5.50 Tolerance mm : +- 0.10
Rated speed rpin . 500	T local artice limit . The U. TO
Rack travel in mm : 0.50	T rooting.
	† Testing:
Tolerance mm : +- 0.20	700
	Rated speed rpm : 300
	- + rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : + 0.10
0.1.1	†
Rated speed rpm : 1130	+ rack travel mm : 2.00
Aneroid pressure	Rated speed rpm : 515
hPa : -	† Tolerance 1/min : +- 30
Del. quantity	†
cm3/1000 strokes : 91.0	†
Tolerance	+
cm3/1000 strokes : + 1.0	+
Check tolerance	+
cm $3/1000$ s. : $\leftarrow$ 3.0	+
Spreed	
Tolerance	+ STARTING FUEL DELIVERY
cm3/1000 strokes : 3.5	+
Check tolerance	+ Rated speed rpm : 100
cm3/1000s. : 6.0	+ rack travel mm : 16.00
	+ Tolerance mm : + 0.30
	- 🗼
CONTROL LEVER	+
	<u> </u>
control lever	LOW IDLE
position degree : 60.0	+
tolerance degree : +- 4.0	Rated speed rpm : 300
RATED SPEED	Rack travel in mm: 6.00
rack travel mm : 8.50	+ Tolerance mm : + 0.10
	,

H01

Del. quantity		
cm3/1000 strokes	:	17.5
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000S.	: +-	5.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.01.98 : ISO 4113

Combination No. : 0 402 036 762

Injection pump

Pump designation : PES6P110A120RS3353

EP type number : 0 412 016 752

Governor

Governer design. : RQV450...1100PA1233

: -1K

Governer no. : 0 421 815 479

Cust. part No. : 3926776

Customer-spec. information Customer : CDC : 6CTA Motor Power KW : 194.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05 Check

tolerance mm : ← 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance "NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 13.00 Difference ° CS : 1.20

		† Tolerance mm	: <del>+-</del> 0.25
BASIC SETTING		Rated speed rpm	: 890
Rated speed rpm	: 1000	travel mm Tolerance mm	: 4.75 : +- 0.25
Rack travel in mm Tolerance mm		Rated speed rpm guide sleeve travel mm	: 1570 : 13.50
Del. quantity cm3/1000 strokes	: 206.5	Tolerance mm	
Tolerance cm3/1000 strokes	: +- 1.0	+	RY AT FULL LOAD STOP
Check tolerance cm3/1000s.	: +- 4.0	+ Rated speed rpm + Aneroid pressure + hPa	: 1000 : 1200
Spreed			: 206.5
Tolerance cm3/1000 strokes	: 8.0	cm3/1000 strokes Check tolerance	-
Check tolerance cm3/1000s.	: 12.0	cm3/1000s. Spreed Tolerance cm3/1000 strokes	: +- 4.0 : 8.0
Rated speed rpm	: 500	Check tolerance cm3/1000s.	
Rack travel in mm		CONTROL LEVER	
Del. quantity cm3/1000 strokes Tolerance	: 22.5	control lever position degree	• 117 0
cm3/1000 strokes Check tolerance		tolerance degree	
Spreed Tolerance	: +- 5.0	+ RATED SPEED + rack travel mm + Rated speed rpm	
cm3/1000 strokes Check tolerance cm3/1000S.	: 4.0 : 8.0	Tolerance 1/min rack travel mm	: <b>←</b> 15 : 7.95
		Rated speed rpm Tolerance 1/min	: 1230
(B) SETTING OF INJUNITH GOVERNOR	ECTION PUMP	rack travel min Tolerance min Rated speed rpm	: +- 0.50
GUIDE SLEEVE TRAVE	L	T Nated Speed (pill)	. 1350
guide sleeve	: 1214	100 7015	
travel mm Tolerance mm	: 8.09 : +- 0.15	+ LOW IDLE	
guide sleeve	: 500 : 1.82	control lever position degree tolerance degree	

H04

	+
Control Lever difference Grad : 38.0	Start interlock
tolerance degree : +- 6.0	+
Setting point w/out bumper spring	Rated speed rpm : > 100 Rated speed rpm : < 380
Rated speed rpm : 400	Check speed 1/min : > 80
CRT mm min. : > 7.50	+ Check
Testing:	+ speed 1/min : < 390
Rated speed rpm : 500 rack travel mm : 6.00 Tolerance mm : +- 0.20	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 500	Aneroid pressure hPa : 1200 Rated speed rpm : 750
TORQUE CONTROL Rated speed rpm : 1000	Del. quantity cm3/1000 strokes : 197.5 Tolerance
rack travel mm : 13.15 Tolerance mm : +- 0.05	cm3/1000 strokes : + 3.0 Check tolerance
Rated speed rpm : 750	+ cm3/1000s. : + 6.0 + Spreed + Tolerance
rack travel mm : 12.55 Tolerance mm : +- 0.20	cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm : 1100 rack travel mm : 12.60 Tolerance mm : + 0.10	cm3/1000s. : 12.0
TO COT ON THE PARTY OF THE PART	Aneroid pressure
ANEROID/ALTITUDE COMPENSATOR TEST	Rated speed rpm : 1100 + rack travel mm : 12.60 + Tolerance mm : + 0.10
SETTING	Del. quantity cm3/1000 strokes : 190.5 Tolerance
Rated speed rpm : 1000 Pressure hPa : 1200	cm3/1000 strokes : + 2.0 Check tolerance
Rated speed rpm : 1000	+ cm3/1000s. : +- 5.0
Pressure hPa : - rack travel mm : 10.15 Tolerance mm : + 0.20	Aneroid pressure
MEASUREMENT	Rated speed rpm : 1000 bel. quantity
Rated speed rpm : 1000	+ cm3/1000 strokes : 124.0 + Tolerance
Pressure hPa : 720 rack travel mm : 12.20 Tolerance mm : + 0.30	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Pressure hPa : 580	<u> </u>
rack travel mm : 11.20 Tolerance mm : + 0.20	STARTING FUEL DELIVERY
10 COT OFFICE THE STATE OF ED	Rated speed rpm : 100

rack travel mm	:		21.00
Tolerance mm	:	+-	0.50
Del. quantity			
cm3/1000 strokes	:		161.0
Tolerance			
cm3/1000 strokes	:	+	20.0
Check tolerance			
cm3/1000s.	:	+-	25.0

### LOW IDLE

Rated speed rpm	:	500
Rack travel in mm Tolerance mm	: +-	6.00 0.20
Del. quantity cm3/1000 strokes Tolerance	:	22.5
cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1900s. Spreed	: +-	5.0
Tolerance cm3/1000 strokes	:	4.0
Check tolerance cm3/1000s.	:	8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.07.98 : ISO 4113

Combination No. : F 002 A07 069

Injection pump

Pump designation : PES6A95D32O/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV500...1100A2C947R

Governer no. : F 002 A20 248

Cust. part No. : 3933623

Customer—spec. information Customer : CDC

Motor

: 6BTA

Power KW

: 125.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: <del>+-</del> 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm :

600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

H07

1	
Rack travel in mm: 13.25	
Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 113.5	Rated speed rpm : 1100 Aneroid pressure
	hPa : 1400
Tolerance	Del. quantity
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 113.5 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0
cm3/1000s. : + 3.0	Check tolerance
	cm3/1000s. : +- 3.0
Spreed	Spreed Tolerance
Tolerance	cm3/1000 strokes : 3.5
cm3/1000 strokes : 3.5	Check tolerance
+	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
CIID/10005.	
1	CONTROL LEVER
Rated speed rpm : 500	control lever
+	position degree : 98.0
Rack travel in mm: 5.85	tolerance degree : +- 4.0
Tolerance mm : + 0.10	RATED SPEED
Del. quantity + cm3/1000 strokes : 21.5 +	rack travel mm : 12.25
Tolerance	Rated speed rpm : 1165
cm3/1000 strokes : + 2.0	Tolerance 1/min : +- 5
Check tolerance	Check
cm3/1000s. : +- 4.5 Spreed	speed 1/min : + 10
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : 3.5	Rated speed rpm : 1270
Check tolerance	Tolerance 1/min : + 5
cm3/1000s. : 5.5	Check
İ	speed 1/min : +- 10
(B) SETTING OF INJECTION PUMP	rack travel mm : 0.85
WITH GOVERNOR +	Tolerance mm : + 0.55
†	Rated speed rpm : 1400
	rack travel mm : 4.00
GUIDE SLEEVE POSITION +	Rated speed rpm : 1270
+	Tolerance 1/min : +- 15
control lever	Check speed 1/min : +- 20
position degree : -3	speed 1/min : +- Zu
Rated speed rpm : 800	
Rack travel in mm: 0.50	
Tolerance mm : + 0.20	LOW IDLE
governor spring	
pre-tension +	control lever
click setting x : 2.50	position degree : 78.0
†	tolerance degree : +- 4.0

Control lever difference + Control lever differe	
tolerance degree : +- 6.0 +- Setting point w/out bumper spring +-	FUEL DELIVERY CHARACTERISTICS
to certify points around bampor spring	
Rated speed rpm : 500	Aneroid pressure
rack travel mm : 5.35 + Tolerance mm : + 0.10 +	hPa : 1400 Rated speed rpm : 750
Total arice man	Det. quantity
Rated speed rpm : 100	cm3/1000 strokes : 134.0
COT	Tolerance
CRT mm min. : > 19.00	cm3/1000 strokes : +- 2.0 Check tolerance
Testing:	cm3/1000s. : +- 4.0
+	
Rated speed rpm : 500	47.00
rack travel mm : 5.85 Tolerance mm : + 0.10	rack travel mm : 13.90 Tolerance mm : + 0.20
1.000.000.000	TO COT GITTOUT INTITUTE OF THE COLOR
700017 001700	
TORQUE CONTROL  Rated speed rpm : 1100 +	Aneroid pressure hPa : -
Rated speed rpm : 1100 + rack travel mm : 13.25 +	hPa : — Rated speed rpm : 500
rack travel mm : 13.25 + Tolerance mm : + 0.05	Del. quantity
750	cm3/1000 strokes : 86.0
Rated speed rpm : 750 + rack travel mm : 14.60 +	Tolerance cm3/1000 strokes : +- 1.0
Tolerance mm : + 0.10	Check tolerance
+	cm3/1000s. : ← 3.0
Rated speed rpm : 1000	
rack travel mm : 13.90 + Tolerance mm : + 0.20 +	
- O. CO	STARTING FUEL DELIVERY
ANEROID/ALTITUDE	Rated speed rpm : 100
COMPENSATOR TEST	rack travel mm : 20.50
†	Tolerance mm : + 0.50
SETTING	Del. quantity cm3/1000 strokes : 121.5
55112110	Tolerance
Rated speed rpm : 500	cm3/1000 strokes : + 10.0
Pressure hPa : 1400	Check tolerance cm3/1000s. : +- 15.0
Rated speed rpm : 500	CIID/ 10005. : 7- 15.0
Pressure hPa : -	
rack travel mm : 10.50	
Tolerance mm : 4- 0.20	LOW IDLE
MEASUREMENT	LOW TOLE
· · · · · · · · · · · · · · · · · · ·	Rated speed rpm : 500
Rated speed rpm : 500	Dook trough in my
Pressure hPa : 800	Rack travel in mm : 5.85 Tolerance mm : +- 0.10
rack travel mm : 13.25	Del. quantity
Tolerance mm : +- 0.20	cm3/1000 strokes : 21.5
Pressure hPa : 600	Tolerance
Pressure hPa : 600 + rack travel mm : 11.85 +	cm3/1000 strokes : +- 2.0 Check tolerance
Tolerance mm : +- 0.20	cm3/1000s. : +- 4.5
H09	

Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.07.98 Test oil : ISO 4113

Combination No. : 0 402 648 708

Injection pump

Pump designation : PE8P120A320LS7927 EP type number : 0 412 628 934

Governor

Governer design. : RQ300/1050PA1389 Governer no. : 0 421 801 836

Cust. part No. :

Customer-spec. information

Customer : DHI

Motor : DV15TIS Euro IJ
Power KW : 310.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar :  $\leftarrow$  0.1

Overflow quantity min. L/h : 110 Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.80 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : **C-45-9**C-135-18C

: -225-270-315

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : **←** 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 500

	1
Book Assessed to see a 42 /F	guide sleeve
Rack travel in mm: 12.65	travel mm : 6.00
Tolerance mm : +- 0.05	Tolerance mm : +- 0.10
No.	Dated aread non 1200
Del. quantity	Rated speed rpm : 1290
cm3/1000 strokes : 229.0	guide sleeve
Tolonoo	travel mm : 11.50 Tolerance mm : +- G.発
Tolerance	Toterance mm : +- U. 5:
cm3/1000 strokes : + 1.0	†
Check tolerance	CUINE SUFFUE POSTTION
cm3/1000s. : +- 4.0	GUIDE SLEEVE POSITION
cm3/10005. ; + 4.0	Ť
Western against Autorities (1994), April (19	T
•	+ control lever + position degree : 109
Rated speed rpm : 300	, ,
Rated Speed rpm . 300	Rated speed rpm : 800
Rack travel in mm : 6.00	T Rack travel in mm : 20.00
Tolerance min : +- 0.10	+ Tolerance mm : + 0.80
Del. quantity	T TOTAL HAR . TO U.OU
cm3/1000 strokes : 18.0	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 3.0	TOLL LOAD DELIVERY AT TOLL LOAD STOP
Check tolerance	Rated speed rpm : 500
cm3/1000s. : +- 6.0	Aneroid pressure
Spreed	hPa : 800
Tolerance	Del. quantity
cm3/1000 strokes : 5.0	cm3/1000 strokes : 229.0
Check tolerance	Tolerance
cm3/1000s. : 8.0	cm3/1000 strokes : +- 1.0
	Check tolerance
	cm3/1000s. : +- 4.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
•	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	<del>}</del>
	control lever
Rated speed rpm : 1108	position degree : 34.0
guide sleeve	+ tolerance degree : +- 4.0
travel mm : 6.35 - Tolerance mm : + 0.15	†
Tolerance mm : + 0.15	control lever
	position degree : 96.0
Rated speed rpm : 300	tolerance degree : +- 4.0
guide sleeve : 1.31 - Tolerance mm : + 0.20	04750 00550
Travel mm : 7.37	RATED SPEED
ioterance mm : +- U.ZU .	rack travel mm : 13.00
Dated aread area . 4050	Rated speed rpm : 1102
Rated speed rpm : 1050	Tolerance 1/min : +- 8
guide sleeve	†
travel mm : 6.00	rack travel mm : 4.00
Tolerance mm : + 0.10	Rated speed rpm : 1205
Poted and my : 1/1	Tolerance 1/min : +- 15
Rated speed rpm : 441	mark though the control of the
guille Steeve	Tolonopoo mm . U.DU
+nava1 mm . 4 00	+ 1010+13000 mm * + 13 3()
travel mm : 3.98 -	Pated speed non : 1700
guide sleeve - travel mm : 3.98 - Tolerance mm : + 0.10 -	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
	Rated speed rpm : 1300
Tolerance mm : + 0.10 - Rated speed rpm : 560	Rated speed rpm : 1300
	Rated speed rpm : 1300

		+ 2-stage LDA set	ting
LOW IDLE		Rated speed rpm	
control lever position degree	: 71.0	MEASUREMENT	
tolerance degree	: <del>←</del> 4.0	Rated speed rpm	: 500
control lever position degree tolerance degree		Pressure hPa rack travel mm Tolerance mm	: -0.95
Setting point w/o	out bumper spring	Pressure hPa rack travel mm	: 300 : -3.05
Rated speed rpm	: 200	Tolerance mm	: <b>←</b> 0.05
CRT mm min. Testing:	: > 7.50	Pressure hPa rack travel mm Tolerance mm	: 0.85
Rated speed rpm rack travel mm Tolerance mm	: 6.00	Pressure hPa rack travel mm Tolerance mm	
rack travel mm Rated speed rpm Tolerance 1/min	: 425	Start interlock	
		Rated speed rpm Rated speed rpm	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.65 : +- 0.05	Check speed 1/min Check	: > 185
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 14.00 : + 0.10	speed 1/min  FUEL DELIVERY C	
Rated speed rpm	: 600	<u> </u>	
rack travel mm Tolerance mm	: 14.0G	Aneroid pressur hPa Rated speed rpm	: 1800
ANEROID/ALTITUDE COMPENSATOR TEST		Del. quantity cm3/1000 stroke Tolerance	es : 258.0
		cm3/1000 stroke	
SETTING		cm3/1000s.	: +- 4.0
Rated speed rpm Pressure hPa rack travel mm	: 500 : 1800 : 1.35	Tolerance cm3/1000 stroke Check tolerance	
Tolerance mm	: +- 0.15	cm3/1000s.	: 10.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : -4.15 : +- 0.20	Aneroid pressur hPa Rated speed rpm rack travel mm	: 1800 : : 600

: +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 275.0 Tolerance cm3/1000 strokes : +-4.0 Check tolerance cm3/1000s. 6.0 Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 128.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 250.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : - 14.0 LOW IDLE Rated speed rpm 300

Rack travel in mm : 6.00 Tolerance mm 0.10 Del. quantity

cm3/1000 strokes :

Tolerance cm3/1000 strokes : +-3.0

18.0

Check tolerance

cm3/1000S. 6.0

Spreed Tolerance

5.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.98 Test oil : ISO 4113

Combination No. : 0 402 678 836

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RSV550...1050P0A672

Governer no. : 0 421 833 591

Cust. part No. : 0270746402

Customer—spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 225
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance mm : + 1.00

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance "NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

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B. I. A I	<b>45.</b> (2)	
Rack travel in mm Tolerance mm		FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 270.0	Rated speed rpm : 1030 Aneroid pressure
Tolerance cm3/1000 strokes	: + 1.0	hPa : 1200 Del. quantity cm3/1000 strokes : 270.0
Check tolerance cm3/1000s.	: +- 4.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed		cm3/1000s. : +- 4.0 Spreed
Tolerance cm3/1000 strokes	: 5.0	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s.	: 9.0	cm3/1000S. : 9.0
		CONTROL LEVER
Rated speed rpm	: 550	control lever position degree : 88.0
Rack travel in mm Tolerance mm Del. quantity		tolerance degree : +- 4.0
cm3/1000 strokes Tolerance	+	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 + : +- 6.0	Rated speed rpm : 1070 Tolerance 1/min : +- 1 rack travel mm : 14.60
Spreed Tolerance	‡	Rated speed rpm : 1110
cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0	Tolerance 1/min : +- 4 rack travel mm : 4.00
	‡	rack travel mm : 0.85 Tolerance mm : +- 0.55
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	Rated speed rpm : 1200
		Rated speed rpm : 1071 Tolerance 1/min : + 1
GUIDE SLEEVE POSIT	TON	rack travel mm : 14.60  Rated speed rpm : 1111
control lever position degree Rated speed rpm	: -3 : 800	Tolerance 1/min : +- 4 rack travel mm : 4.00
Rack travel in mm Tolerance mm		rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1200
governor spring pre-tension click setting x	: 2.00	Rated speed rpm : 1072 Tolerance 1/min : +- 1 rack travel mm : 14.60

Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm	: 1112 : + 4 : 4.00 : 0.85 : + 0.55 : 1200	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm Tolerance 1/min rack travel mm	: 1073 : ← 1 : 14.60	† † †
Rated speed rpm Tolerance 1/min rack travel mm	: 1113 : +- 4 : 4.00	<u> </u>
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1200	T + + +
Rated speed rpm Tolerance 1/min rack travel man	: 1074 : ← 1 : 14.60	† + +
Rated speed rpm Tolerance 1/min rack travel mm	: 1114 : ← 4 : 4.00	+
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1200	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm Tolerance 1/min rack travel mm	: 1175 : ← 1 : 14.60	† + +
Rated speed rpm Tolerance 1/min rack travel mm	: 1115 : + 4 : 4.00	+
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1200	+
LOW IDLE		‡
control lever position degree tolerance degree	: 70.0 : +- 4.0	+++++++++++++++++++++++++++++++++++++++

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

### Testing:

Rated speed rpm	: 550
rack travel mm	: 4.00
Tolerance mm	: ← 0.10
rack travel mm	: 2.00
Rated speed rpm	: 570
Tolerance 1/min	: + 30

### SET IDLE AUXILIARY SPRING

rack	travel	MI	:	2.00

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1030 : 15.60 : + 0.05
Rated speed rpm	: 600
rack travel mm	: 15.60
Tolerance mm	: + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

### CRT ZERO POSITION

Rack travel in mm Tolerance mm	:	9.75 +- 0.15
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: : : : :	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	:	450 - 9.75 + 0.20

### **MEASUREMENT**

Rated speed rpm	: 450
Pressure hPa	: 600
rack travel mm	: 12.20
Tolerance mm	: + 0.15
Pressure hPa	: 800
rack travel mm	: 14.10
Tolerance mm	: + 0.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 287.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1060s. : +- 6.0

Aneroid pressure

hPa : 50

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 162.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : + 19.0

### LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.00Tolerance mm :  $\leftarrow 0.10$ 

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.98 Test oil : ISO 4113

Combination No. : 0 402 678 837

Injection pump

Pump designation : PE8P12OA320LS7911 EP type number : 0 412 628 926

Severnor

Governer design. : RSV550...1050P0A679

Governer no. : 0 421 833 598

Cust. part No. : 027 074 6502

Customer-spec. information Customer : MB-NFZ

: OM442LA, Euro Motor Power KW Motor

: 320.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : ← 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110
Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

### BASIC SETTING

Rated speed rpm : 1050

D. I. A	
Rack travel in mm : 14.40 + Tolerance mm : + 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 227.0	Rated speed rpm : 1050 Aneroid pressure hPa : 1100
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 227.0
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	Ciii 37 10003 7.0
	CONTROL LEVER
Rated speed rpm : 550	control lever position degree : 87.0
Rack travel in mm : 4.20 Tolerance mm : + 0.10	position degree : 87.0 tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
Tolerance + cm3/1000 strokes : + 3.0 + Check tolerance +	Rated speed rpm : 1085 Tolerance 1/min : +- 1
cm3/1000s. : + 6.0 + Spreed	rack travel mm : 13.50
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed ram : 1125 Tolerance 1/min : +- 4 rack travel mm : 4.00
cm3/1000s. : 12.0	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance mm : +- 0.55 Rated speed rpm : 1300
GUIDE SLEEVE POSITION	Rated speed rpm : 1087 Tolerance 1/min : +- 1 rack travel mm : 13.50
‡	Rated speed rpm : 1127
control lever position degree : -3 Rated speed rpm : 800	Tolerance 1/min : +- 4 rack travel mm : 4.00
Rack travel in mm : 0.50 + Tolerance mm : + 0.20 +	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
governor spring pre-tension click setting x : 2.00	Rated speed rpm : 1089 Tolerance 1/min : +- 1
The section of the se	rack travel mm : 13.50

Rated speed rpm Tolerance 1/min rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1091
Tolerance 1/min	: + 1
rack travel mm	: 13.50
Rated speed rpm	: 1131
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1093
Tolerance 1/min	: ← 1
rack travel mm	: 13.50
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1095
Tolerance 1/min	: + 1
rack travel mm	: 13.50
Rated speed rpm	: 1135
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1300
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : +- 4.0

Rated speed rpm Tolerance 1/min	: 580 : <del>+</del> 30
SET IDLE AUXILIA	RY SPRING
rack travel mm	: 2.00
TORQUE CONTROL	4050
Rated speed rpm	: 1050
rack travel mm Tolerance mm	: +- 0.05
Rated speed rpm	: 600
Rated speed rpm Tolerance mm	: <b>+</b> 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	Minister State States - Emphasization States as a security of the security of
COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 450 : 1100
rack travel mm	
Tolerance mm	: + 0.10
Rated speed rpm	
Pressure hPa rack travel mm	: – : 11.10
Tolerance mm	: 11.10 : ← 0.20
MEASUREMENT	
Rated speed rpm	: 450
Pressure hPa	: 750
rack travel mm Tolerance mm	: 14.30 : + 0.20
Pressure hPa	: 550
rack travel mm Tolerance mm	: 12.50 : + 0.15

Aneroid pressure : 1100 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 248.0 Tolerance cm3/1000 strokes : +- 2.0

Testing:

Rated speed rpm : 550 rack travel mm : 4.20 Tolerance mm : + 0.10

Check tolerance cm3/1000s.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Aneroid pressure			-
Rated speed rpm	:		500
Del. quantity cm3/1000 strokes	:		166.0
Tolerance cm3/1000 strokes	:	+	2.0
Check tolerance cm3/1000s.	;	+-	5.0

### STARTING FUEL DELIVERY

Rated speed rom		100
Del. quantity cm3/1000 strokes	:	250.0
Tolerance cm3/1000 strokes Check tolerance	: +	- 15.0
cm3/1000s.	: +	- 79.0

## LOW IDLE

Rated speed rpm	•	550
Rack travel in mm Tolerance mm Del. quantity	: +-	4.20 0.10
cm3/1000 strokes	:	19.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.98 Test oil : ISO 4113

Combination No. : 9 402 678 839

Injection pump

Pump designation : PE8P120A320LS7912 EP type number : 0 412 628 927

Governor

Governer design. : RSV550...1050P0A681

Governer no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer-spec. information Customer : MB-NFZ

Motor : OM402LA, Euro Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 120 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : <del>+-</del> 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.70 Tolerance mm : + 0.05  Del. quantity cm3/1000 strokes : 208.0  Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000s. : + 4.0  Spreed	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 208.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. 9.0	control lever position degree : 88.0 tolerance degree : + 4.0
Rated apped rpm : 550	ASSEMBLY GOVERNOR SETTING
Rack travel in mm: 4.10 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 18.0	Rated speed rpm : 1070 Tolerance 1/min : + 1 rack travel mm : 12.70
Tolerance : + 3.0 : Check tolerance : + 6.0 :	Rated speed rpm : 1110 Tolerance 1/min : + 4 rack travel mm : 4.00
Spreed - Tolerance - cm3/1000 strokes : 8.0 - Check tolerance - cm3/1000s. : 12.0	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1071 Tolerance 1/min : + 1 rack travel mm : 12.70
	+ Rated speed rpm : 1111 - Tolerance 1/min : + 4 - rack travel mm : 4.00
control lever position control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 1072 Tolerance 1/min : + 1 rack travel mm : 12.70
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1112 Tolerance 1/min : +- 4 rack travel mm : 4.00
Rated speed rpm : 1030 -	rack travel mm : 0.85

Tolerance mm : +- 0.55 Rated speed rpm : 1300	† Tolerance mm : + 0.10
macca specia i piii . 1500	rack travel mm : 2.00
Datad amond non . 1077	+ Rated speed rpm : 575
Rated speed rpm : 1073	+ Tolerance 1/min : +- 30
Tolerance 1/min : +- 1	T
rack travel mm : 12.70	+ SET IDLE AUXILIARY SPRING
Rated speed rpm : 1113	rack travel mm : 2.00
Tolerance 1/min : +- 4	1 . 40% (1440 ( 1141) . 2.00
rack travel mm : 4.00	
rack travet min . 4.00	TORQUE CONTROL
manh Americal com	
rack travel mm : 0.35	- Rated speed rpm : 1030
Tolerance mm : + 0.55	rack travel mm : 13.70
Rated speed rpm : 1300	Tolerance mm : + 0.05
	+
	+ Rated speed rpm : 600
Rated speed rpm : 1074	+ rack travel mm : 14.70 + Tolerance mm : + 0.10
Tolerance 1/min : + 1	+ Tolerance mm : +- 0.10
rack travel mm : 12.70	1
, , , , , , , , , , , , , , , , , , , ,	Rated speed rpm : 900
Rated speed rpm : 1114	rack travel mm : 14.20
Tolerance 1/min : + 4	+ Tolerance mm : + 0.10
	Total ance min . Total
rack travel mm : 4.00	T
neel travel on 0.05	ANICOATA (AL TITULO)
rack travel mm : 0.85	+ ANEROID/ALTITUDE
Tolerance mm : + 0.55	+ COMPENSATOR TEST
Tolerance mm : +- 0.55 Rated speed rpm : 1300	+
	+
	+ SETTING
Rated speed rpm : 1075	1
Tolerance 1/min : +- 1	Rated speed rpm : 450
rack travel mm : 12.70	Pressure hPa : 1000
1 4012 61 4106 11811 1 12.70	rack travel mm : 14.70
Rated speed rpm : 1915	+ Tolerance mm : +- 0.15
	T roterance min ; +- 0,15
Tolerance 1/min : + 4	T Botad amand aman //50
rack travel mm : 4.00	+ Rated speed rpm : 450
	Pressure hPa : -
rack travel mm : 0.85	+ rack travel mm : 12.40 + Tolerance mm : + 0.15
Tolerance mm · +- 0.55	f Tolerance mm : + 0.15
Rated speed rpm : 1300	†
	+ MEASUREMENT
	+
LOW IDLE	+ Rated speed rpm : 450
	+
	+ Pressure hPa : 750
control lever	Pressure hPa : 750 rack travel mm : 14.00 Tolerance mm : +- 0.15
position degree : 71.0	+ Tolerance mm : +- 0.15
tolerance degree : + 4.0	1
	Pressure hPa : 650
Setting point w/out bumper spring	
occord bottle woode position she ma	+ rack travel mm : 13.40 + Tolerance mm : +- 0.15
Rated speed rpm : 100	T rocerance min : T 0.15
rated speed rpm : 100	T
COT	Ť
CRT mm min. : > 19.50	FIRE API TIMEN AND ADDRESS OF THE PROPERTY OF
<b>T</b>	+ FUEL DELIVERY CHARACTERISTICS
Testing:	†
	† <del> </del>
Rated speed rpm : 550	+ Aneroid pressure
rack travel mm : 4.10	+     hPa     : 1000

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 600 : 240.0 : ← 2.0 : ← 5.0 : 8.0 : 12.0
rack travel mm Tolerance mm	: 14.20 : + 0.10
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: ← 1.0 : ← 4.0 : 8.0 : 12.0 IVERY : 100 : 220.0
Check tolerance cm3/1000s.	: +- 19.0
LOW IDLE	
Rated speed rpm	: 550
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 0.10 : 18.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

H26

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97 Test oil : ISO 4113

Combination No. : 0 402 646 781

Injection pump

Pump designation : PE6P120A320LS7854 EP type number : 0 412 626 872

Sovemor

Governer design. : RQV350...950PA1118 Governer no. : 0 421 814 081

Cust. part No. : 0250742002

Customer—spec. information Customer : MB-NFZ Motor : 0M441 LA Power KW : 250.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.7

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 140 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

#### BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 14.50 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 252.0	Tolerance mm : +- 0.25
Tolerance	Rated speed rpm : 720 guide sleeve
cm3/1000 strokes : + 1.0	travel mm : 4.94 Tolerance mm : +- 0.25
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1210
Spreed	guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Tolerance	Total drice light . 1 0.30
cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION
Check tolerance	00100 00000 100111014
cm3/1000S. : 9.0	t control lever
	position degree : - 1
•	
	Rated speed rpm : 1080
Rated speed rpm : 350	+
•	+ Rack travel in mm : 13.50
Rack travel in mm: 5.40	Tolerance mm : + 1.30
Tolerance mm : + 0.10	
Del. quantity	
	FULL LOAD OF TUEDY AT FULL LOAD STOD
	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	<del>†</del>
$cm3/1000$ strokes : $\leftarrow$ 3.0	+ Rated speed rpm : 950
Check tolerance	+ Aneroid pressure
cm3/1000s. : +- 6.0	hPa : 1200
Spreed	Del. quantity
Tolerance	cm3/1000 strokes : 252.0
cm3/1000 strokes : 6.0	Tolerance
Check tolerance	cm3/1000 strokes : + 1.0
cm3/1000s. : 10.0	Check tolerance
•	+ cm3/1000s. : +- 4.0
•	Spreed
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR	cm3/1000 strokes : 5.0
•	Check tolerance
	cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	1 7.0
COLVE SEEEVE HAVEE	
Rated speed rpm : 1010	
guide sleeve	CONTROL LEVER
travel mm : 9.49	T CONTROL LEVER
	T control loves
Tolerance mm : + 0.15	control lever
	position degree : 103.0
Rated speed rpm : 350	tolerance degree : +- 4.0
guide sleeve	t
travel mm : 1.22	RATED SPEED
Tolerance mm : + 0.20	rack travel mm : 13.50
-	Rated speed rpm : 995
Rated speed rpm : 403	Tolerance 1/min : + 5
guide sleeve	100000000000000000000000000000000000000
travel mm : 1.97	rack travel mm : 4.00
Tolerance mm : + 0.25	Rated speed rpm : 1075
· · · · · · · · · · · · · · · · · · ·	Tolerance 1/min : + 15
Rated speed rpm : 453 -	+
guide sleeve	rack travel mm : 0.70
travel mm : 2.56	Tolerance mm : +- 0.70
	,

Rated speed rpm : 1200	+ Pressure hPa : 600 + rack travel mm : 2.60 + Tolerance mm : + 0.10
LOW IDLE	Start interlock
control lever position degree : 68.0	Rated speed rpm : > 100 Rated speed rpm : < 270
tolerance degree : + 4.0	Check speed 1/min : > 80
Setting point w/out bumper spring	- Check - speed 1/min : < 290
Rated speed rpm : 250	
CRT mm min. : > 9.00	FUEL DELIVERY CHARACTERISTICS
Testing:	Aneroid pressure
Rated speed rpm : 350	+ hPa : 1200
rack travel mm : 5.40	+ hPa : 1200 + Rated speed rpm : 600
Tolerance mm : +- 0.10	+ Del. quantity
Dated aread area (100	- cm3/1909 strokes : 265.9
Rated speed rpm : 400	Tolerance
	+ cm3/1000 strokes : +- 2.0
TORQUE CONTROL	Check tolerance cm3/1000s. : +- 5.0
Rated speed rpm : 950	Spreed
rack travel imm : 14.50	+ Tolerance
Tolerance mm : +- 0.05	+ cm3/1000 strokes : 8.0
	+ Check tolerance
Rated speed rpm : 600 rack travel mm : 14.50 Tolerance mm : 1.05	+ cm3/1000s. : 12.0
rack travel mm : 14.50	+
folerance mm : ├ 0.05	_
	+ Aneroid pressure
AND AND AND THE PROPERTY OF	+ hPa : -
ANEROID/ALTITUDE	Rated speed rpm : 500
COMPENSATOR TEST	+ Del. quantity + cm3/1000 strokes : 136.0
	+ cm3/1000 strokes : 136.0 + Tolerance
SETTING	- cm3/1000 strokes : +- 1.0
	Check tolerance
CRT ZERO POSITION	+ cm3/1000s. : +- 4.0
	Spreed
Rack travel in mm : 10.25	+ Tolerance
Folerance mm : +- 0.15	+ cm3/1000 strokes : 8.0
	Check tolerance
Rated speed rpm : 500 Pressure hPa : -	- cm3/1000s. : 12.0
obed aread area 500	†
Rated speed rpm : 500 Pressure hPa : 350	CTARTING FUEL NELTHERY
Pressure hPa : 350 Pack travel mm : 1.35	+ STARTING FUEL DELIVERY
rack travel mm : 1.35 Tolerance mm : +- 0.05	Rated speed rpm : 100
Total Grant Transport	+ Del. quantity
MEASUREMENT	cm3/1000 strokes : 245.0
There is no server a thirty of the server and the s	+ Tolerance
Rated speed rpm : 500	+ cm3/1000 strokes : +- 10.0
•	+

Check tolerance cm3/1000s. : + 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance

cm3/1000s. : 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.09.97 Test oil : ISO 4113

Combination No. : 0 402 648 780

Injection pump

Pump designation : PE8P12OA320LS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -2K

Governer no.

: 0 421 815 548

Cust. part No. : 988 04 47

Customer-spec. information

Customer : LIEBHERR

: D 9408 TI-EA3 Motor

Power KW : 420.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 230
Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter: 8.0

3.0

x inside diameter : 3 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.65 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance min

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

: 0-45-90-135-180 Phasing

: -225-270-315

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 12.65 Tolerance mm : ← 0.05

Del. quantity

cm3/1000 strokes : 295.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0	CHARE OF CLASS ASSESSMENT OF THE CONTROL OF THE CON
Spreed	+ GUIDE SLEEVE POSITION +
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1180
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 12.50 Tolerance mm : + 2.70
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.50 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 1050 Aneroid pressure hPa : 1600
cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +- 3.0	+ Del. quantity + cm3/1000 strokes : 295.0 + Tolerance
Check tolerance cm3/1000s. : +- 6.0	+ cm3/1000 strokes : + 1.0 + Check tolerance
Spreed Tolerance	- cm3/1000s. : +- 4.0 - Spreed
cm3/1000 strokes : 6.0 Check tolerance	+ Tolerance + cm3/1000 strokes : 5.0
cm3/1000s. : 10.0	+ Check tolerance + cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1117 guide sleeve	+ position degree : 121.0 + tolerance degree : + 4.0 +
travel mm : 10.27 Tolerance mm : +- 0.15	+ RATED SPEED + rack travel mm : 11.65
Rated speed rpm : 300 guide sleeve	Rated speed rpm : 1110 Tolerance 1/min : +- 5
· · · · · · · · · · · · · · · · · · ·	Rated speed rpm : 1110 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200
guide sleeve travel mm : 1.11	Rated speed rpm : 1110 Tolerance 1/min : + 5 rack travel mm : 4.00
guide sleeve travel mm : 1.11 Tolerance mm : + 0.20  Rated speed rpm : 755	Rated speed rpm : 1110 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15
guide sleeve travel mm : 1.11 Tolerance mm : + 0.20  Rated speed rpm : 755 guide sleeve travel mm : 6.17 Tolerance mm : + 0.25  Rated speed rpm : 480	Rated speed rpm : 1110 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm : 1.11 Tolerance mm : + 0.20  Rated speed rpm : 755 guide sleeve travel mm : 6.17 Tolerance mm : + 0.25	Rated speed rpm : 1110 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm : 1.11 Tolerance mm : + 0.20  Rated speed rpm : 755 guide sleeve travel mm : 6.17 Tolerance mm : + 0.25  Rated speed rpm : 480 guide sleeve travel mm : 3.75	Rated speed rpm : 1110 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300

Setting	point	w/out	bumper	spring
---------	-------	-------	--------	--------

Rated s	beed	rpm	:	250
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CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350 rack travel mm : 5.50 Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050 rack travel rmm : 12.65 Tolerance rmm : +- 0.05

Rated speed rpm : 500 rack travel mm : 10.00 Tolerance mm : + 0.10

Rated speed rpm : 800 rack travel mm : 11.80 Tolerance mm : + 0.10

Rated speed rpm : 950 rack travel mm : 12.20 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 10.80 Tolerance mm : + 0.20

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 12.65
Tolerance mm : + 0.05

Rated speed rpm : 1050
Pressure hPa : rack travel mm : 8.30
Tolerance mm : +- 0.20

#### **MEASUREMENT**

Rated speed rpm : 1050

Pressure hPa : 1050 rack travel mm : 11.80

Tolerance mm : +- 0.05

Pressure hPa : 700 rack travel mm : 9.50 Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : > 100 Rated speed rpm : < 270

Check

speed 1/min : > 80

Check

speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 276.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 299.0
Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 209.0
Tolerance

cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.

: 12.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.20 Tolerance mm : + 0.30 Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

#### LOW IDLE

Rated speed rpm : 350 Rack travel in mm: 5.50 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97 Test oil : ISO 4113

Combination No. : 0 402 648 780A

Injection pump

Pump designation : PE8P12OA32OLS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -2K

Governer no. : 0 421 815 548

Cust. part No. : 988 04 47

Customer—spec. information Customer : LIEBHERR

Motor : D 9403 TI-EA3

Power KW : 420.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 295.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1182
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 12.48 Tolerance mm : + 1.30
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 5.50  Tolerance mm: + 0.10  Del. quantity	Rated speed rpm : 1050 Aneroid pressure hFa : 1600
cm3/1000 strokes : 30.0	Del. quantity cm3/1000 strokes : 295.0
cm3/1000 strokes : + 3.0 Check tolerance	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s. : + 6.0 + 5preed + 7olerance	Check tolerance cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : 6.0 + Check tolerance	Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : 10.0	Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1117 guide sleeve	position degree : 121.0 tolerance degree : +- 4.0
travel mm : 10.27 Tolerance mm : + 0.15	RATED SPEED rack travel mm : 11.65 Rated speed rpm : 1110
Rated speed rpm : 300	Tolerance 1/min : + 5
travel mm : 1.11 Tolerance mm : + 0.20	rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15
Rated speed rpm : 755 guide sleeve travel mm : 6.17	rack travel mm : 0.50 Tolerance mm : + 0.50
Tolerance mm : + 0.25	Tolerance mm : +- 0.50 Rated speed rpm : 1300
Rated speed rpm : 480	
travel mm : 3.75 Tolerance mm : + 0.25	LOW IDLE
Rated speed rpm : 1330 guide sleeve	control lever
travel mm : 13.50 + Tolerance mm : +- 0.50 +	position degree : 71.0 tolerance degree : +- 4.0
CUIDE CLEENE POSITION	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	Rated speed rpm : 300

Rated speed rpm :

300

CRT mm min.	: > 6.00
Testing:	
Rated speed rpm	: 350
rack travel mm	: 5.50
Tolerance mm	: <b>←</b> 0.10
Rated speed rpm	: 400
TORQUE CONTROL	
Rated speed rpm	: 1050
rack travel mm	: 12.65
Tolerance mm	: +- 0.05
Rated speed rpm	: 500
rack travel mm	: 10.00
Tolerance mm	: <b>←</b> 0.10
Rated speed rpm	: 800
rack travel mm	: 11.80
Tolerance mm	: +- 0.10
	050
Rated speed rpm rack travel mm	
Tolerance mm	: + 0.10
rocci di loc mili	0.10
Rated speed rpm	
rack travel mm	: 10.80
Tolerance mm	: <b>←</b> 0.20
ANEROID/ALTITUDE	
SETTING	
SETTING Rated speed rpm	: 1050
SETTING Rated speed rpm Pressure hPa	: 1600
SETTING  Rated speed rpm Pressure hPa rack travel wan	: 1600 : 12.65
SETTING Rated speed rpm Pressure hPa	: 1600
SETTING  Rated speed rpm Pressure hPa rack travel fin Tolerance mm  Rated speed rpm	: 1600 : 12.65
Rated speed rpm Pressure hPa rack travel inn Tolerance mm  Rated speed rpm Pressure hPa	: 1600 : 12.65 : ← 0.05 : 1050
Rated speed rpm Pressure hPa rack travel inn Tolerance mm  Rated speed rpm Pressure hPa rack travel mm	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30
Rated speed rpm Pressure hPa rack travel man Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1600 : 12.65 : ← 0.05 : 1050
Rated speed rpm Pressure hPa rack travel inn Tolerance mm  Rated speed rpm Pressure hPa rack travel mm	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30
Rated speed rpm Pressure hPa rack travel man Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1600 : 12.65 : ← 0.05 : 1050 : − : 8.30 : ← 0.20
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30 : +- 0.20 : 1050 : 1050 : 11.80
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Pressure hPa	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30 : +- 0.20 : 1050 : 1050
Rated speed rpm Pressure hPa rack travel inn Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1600 : 12.65 : + 0.05 : 1050 : - : 8.30 : + 0.20 : 1050 : 1050 : 11.80 : + 0.05
SETTING  Rated speed rpm Pressure hPa rack travel imm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm	: 1600 : 12.65 : +- 0.05 : 1050 : - : 8.30 : +- 0.20 : 1050 : 1050 : 11.80

Tolerance mm	: <del>+-</del> 0.20
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm Del. quantity	: 1600 : 500
cm3/1000 strokes Tolerance	: 276.0
cm3/1000 strokes Check tolerance	: <del>-</del> 3.0
cm3/1000s.	: ← 6.0
Aneroid pressure	4.400
hPa Rated speed rpm	: 1600 : 800
rack travel mm	: 11.80
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 299.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance	
cm3/1000s.	: +- 6.0
Aneroid pressure	
Rated speed rpm	: 550
Del. quantity	
cm3/1000 strokes	: 209.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	/. //
Spreed	: +- 4.0
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0
STARTING FUEL DEL	TNEDV

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Rated speed rpm	: 100
rack travel mm	: 10.00
Tolerance mm	: +- 0.30
Del. quantity	
cm3/1000 strokes	: 150.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 15.0
Check tolerance	
cm3/1000s.	: <b>←</b> 19.0

### LOW IDLE

LCW ICCE				
Rated speed rpm	:		350	
Rack travel in mm Tolerance mm Del. quantity			5.50 0.10	
	•		30.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
ch3/1000s. Spreed Tolerance	:	+	6.0	
cm3/1000 strokes Check tolerance	:		6.0	
cm3/1000s.	:		10.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 26.09.97 : ISO 4113

Combination No. : 0 402 648 967

Injection pump

Pump designation : PE8P120A320LS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

Governer no. : 0 421 815 361

Cust. part No. : 9275447

Customer-spec. information Customer : LIEBHERR Motor : D 9408 Power KW : 400.0 : D 9408 TI

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

Phasing : 0-45-90-135-130

: -225-270-315 : +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: **←** 4.0 cm3/1000s.

Spreed

	- Tolerance mm : +- 0.25
Tolerance	Toterance min . 1 0.25
cm3/1000 strokes : 5.0 -	- Rated speed rpm : 1320 - guide sleeve
Check tolerance	travel mm : 13.50
cm3/1000s. : 9.0	- Tolerance mm : + 0.50
•	CHINE CLEENE CONTITON
Rated speed rpm : 350	- GUIDE SLEEVE POSITION
nacca speca (pii) . 556	
Rack travel in mm: 5.30	- control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity - cm3/1000 strokes : 30.0 -	- Rated speed rpm : 1185
Tolerance	Rack travel in mm : 10.80
cm3/1000 strokes : +- 3.0	- Tolerance mm : + 2.70
Check tolerance	•
cm3/1000s. : +- 6.0 Spreed	- FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	FOLL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 6.0	- Rated speed rpm : 1050
Check tolerance	- Aneroid pressure
.cm3/1000s. : 10.0 -	hPa : 1600
]	- Del. quantity - cm3/1000 strokes : 300.0
(B) SETTING OF INJECTION PUMP	- Tolerance
WITH GOVERNOR	- cm3/1000 strokes : $+$ 1.0
+	- Check tolerance
GUIDE SLEEVE TRAVEL	- cm3/1000s. : +- 4.0 - Spreed
GOING SEEEAE INNAEE	- Tolerance
Rated speed rpm : 1117	- cm3/1000 strokes : 5.0
guide sleeve	- Check tolerance
travel mm : 10.38 Tolerance mm : + 0.25	- cm3/1000s. : 9.0
10 Cer di 10e (18)	
Rated speed rpm : 300	
guis, sleeve	- CONTROL LEVER
ties mm : 1.69 Tolerance mm : +- 0.25	- - control lever
Total arice lixii . +- 0.25	- position degree : 119.0
Rated speed rpm : 746	tolerance degree : + 4.0
guide sleeve	
travel mm : 6.20 - 7.25 - 7.25	- RATED SPEED - rack travel mm : 11.75
Toterarice IIIII . TO 0.25	- rack travel mm : 11.75 - Rated speed rpm : 1110
Rated speed rpm : 353	- Tolerance 1/min : +- 5
guide sleeve	•
travel mm : 2.45 Tolerance mm : +- 0.25	- rack travel mm : 4.00 - Rated speed rpm : 1200
Toterance man : += 0.25	- Rated speed rpm : 1200 - Tolerance 1/min : +- 15
Rated speed rpm : 403	-
guide sleeve	rack travel mm : 0.50
travel mm : 3.18	- Tolerance mm : + 0.50
Tolerance mm : +- 0.25	- Rated speed rpm : 1300
Rated speed rpm : 450	-
guide sleeve	-
travel mm : 3.66	-
·	

LOW IDLE	
control lever position degree tolerance degree	: 70.0 : ← 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 5.30
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 550 : 10.50 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.60 : +- 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 550 : 1600 : 10.50 : + 0.10
Rated speed rpm Pressure hPa rack travel mm	: 550 : - : 9.15

Tolerance mm MEASUREMENT	: <del></del> 0.20
Rated speed rpm	: 550
Pressure hPa rack travel mm Tolerance mm	: 675 : 10.35 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 575 : 9.75 : ← 0.15
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1600
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: +- 6.0
rack travel mm Tolerance mm	: 10.50 : + 0.10
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1600 : 700
cm3/1000 strokes Tolerance	: 299.0
cm3/1000 strokes Check tolerance	
cm3/1000s.	: +- 6.0
Aneroid pressure hPa Rated speed rpm	: – : 550
Del. quantity cm3/1000 strokes Tolerance	: 242.5
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000S. Spreed	: <b>←</b> 4.0
Tolerance cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.15
Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : +- 10.0

#### LOW IDLE

Rated speed rpm : 350 Rack travel in mm: 5.30 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 scrokes : - 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26.09.97

Combination No. : 0 402 648 967A

Injection pump

Pump designation : PE8P120A320LS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

Governer no.

: 0 421 815 361

Cust. part No. : 9275448

Customer-spec. information Customer : LIEBHERR

TEST BENCH REQUIREMENTS

: D 9408 TI

Motor Power KW

: 400.0

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 417 413 047

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

3.0

x Length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Tolerance mm : ÷- 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 10.50 : +- 0.50

Tolerance mm

Firing order

: 1-8-7-2-6 : - 3- 5- 4

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes :

300.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

	+ Tolerance mm : +~ 0.25
Tolerance cm3/1000 strokes : 5.0	+ Rated speed rpm : 1320 + guide sleeve
Check tolerance cm3/1000s. : 9.0	travel mm : 13.50 Tolerance mm : + 0.50
Rated speed rpm : 350	GUIDE SLEEVE POSITION
Rack travel in mm : 5.30 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance	control lever position degree : - 1 Rated speed rpm : 1185  Rack travel in mm : 10.80 Tolerance mm : +- 2.70
cm3/1000S. : +- 6.0 Spreed Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0	+ Rated speed rpm : 1050 + Aneroid pressure + hPa : 1600 + Del. quantity
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- cm3/1000 strokes : 300.0 - Tolerance - cm3/1000 strokes : + 1.0 - Check tolerance - cm3/1000s. : + 4.0
GUIDE SLEEVE TRAVEL	Spreed
Rated speed rpm : 1117 guide sleeve travel mm : 10.38 Tolerance mm : + 0.25	Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0
Rated speed rpm : 300 guide sleeve travel mm : 1.69 Tolerance mm : +- 0.25  Rated speed rpm : 746	control lever position degree : 119.0 tolerance degree : + 4.0
guide sleeve travel mm : 6.20 Tolerance mm : +- 0.25	+ RATED SPEED + rack travel mm : 11.75 + Rated speed rpm : 1110
Rated speed rpm : 353 guide sleeve travel mm : 2.45 Tolerance mm : +- 0.25	Tolerance 1/min : + 5  rack travel mm : 4.00  Rated speed rpm : 1200  Tolerance 1/min : + 15
Rated speed rpm : 403 guide sleeve travel mm : 3.18 Tolerance mm : + 0.25	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1300
Rated speed rpm : 450 guide sleeve travel mm : 3.66	+

LOW IDLE	
control lever position degree tolerance degree	: 70.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 6.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.30 : + 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.75 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.50 : + 0.10
Rated speed rpm rack travel num Tolerance mm	: 550 : 10.50 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.40 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.60 : ← 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 550 : 1600 : 10.50 : ← 0.10
Rated speed rpm Pressure hPa rack travel mm	: 550 : - : 9.15

Tolerance mm	: +- 0.20
MEASUREMENT	
Rated speed rpm	: 550
Pressure hPa rack travel mm Tolerance mm	: 675 : 10.35 : ← 0.05
Pressure hPa rack travel mm Tolerance mm	: 575 : 9.75 : + 0.15
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1600 : 500
Del. quantity cm3/1000 strokes Tolerance	: 298.0
cm3/1000 strokes Check tolerance cm3/1000s.	: ← 3.0 : ← 6.0
rack travel mm Tolerance mm	: 10.50 : + 0.10
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1600 : 700 : 299.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 550 : 242.5 : + 1.5 : + 4.0 : 8.0 : 12.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 9.15 rack travel mm : Tolerance mm : **←** 0.30

Del. quantity

cm3/1000 strokes : 160.0

Toterance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

: <del>+-</del> 14.0 cm3/1000s.

### LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.30 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s.: +- 6.0

teerq? Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.09.97 Test oil : ISO 4113

Combination No. : 0 402 676 825

Injection pump

Pump designation : PE6P12OA32ORS7430 EP type number : 0 412 626 960

Governor

Governer design. : RSV300...850P1A614 Governer no. : 0 421 833 502

Cust. part No. : 11031231 P06 v.08/97

Customer—spec. information Customer : VCE

Motor : TD 103 KAE Power KW : 190.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 300
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance "NW :  $\leftarrow$  0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

. - - -

†	
Rack travel in mm: 12.20 + Tolerance mm: + 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 306.0	Rated speed rpm : 500 Aneroid pressure
Tolerance + 1.0 +	hPa : 1500 Del. quantity cm3/1000 strokes : 306.0
Check tolerance	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 4.0	Check tolerance cm3/1000s. : + 4.0
Spreed	Spreed Tolerance
Tolerance + cm3/1000 strokes : 7.0 +	cm3/1000 strokes : 7.0 Check tolerance
Check tolerance cm3/1000s. : 11.0	cm3/1000s. : 11.0
	CONTROL LEVER
Rated speed rpm : 325	control lever
Rack travel in mm : 4.20 + Tolerance mm : + 0.10 +	position degree : 52.0 tolerance degree : + 4.0
Del. quantity + cm3/1000 strokes : 34.0 + Tolerance	control lever position degree : 102.0 tolerance degree : 4- 4.0
cm3/1000 strokes : + 3.0 + Check tolerance	RATED SPEED
cm3/1000s. : +- 6.0 +- Spreed +- Tolerance +-	rack travel mm : 10.80 Rated speed rpm : 875 Tolerance 1/min : +- 5
cm3/1000 strokes : 5.0 + Check tolerance	rack travel mm : 4.00
cm3/1000s. : 8.0	Rated speed rpm : 950 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION FUMP WITH GOVERNOR	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1100
GUIDE SLEEVE POSITION	
control lever	LOW IDLE
position degree : -3 + Rated speed rpm : 800 +	control lever
Rack travel in mm: 0.50	position degree : 76.0 tolerance degree : + 4.0
Tolerance mm : + 0.20	control lever
governor spring pre-tension	position degree : 26.0 tolerance degree : +- 4.0
click setting x : 6.00	Setting point w/out bumper spring

Rated speed vipm rack travel mm Tolerance mm	: 325 : 3.70 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 325 : 4.20 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 570 : 12.00 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.50 : + 0.10
ANEROID/ALTITUDE COMPENSATION TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.20 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.35 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 575 : 2.35 : +- 0.20

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1500 : 700
Del. quantity cm3/1000 strokes Tolerance	: 264.0
cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 4.0
Spreed Tolerance cm3/1000 strokes	: 10.0
Check tolerance cm3/1000s.	: 14.0
rack travel mm Tolerance mm	: 12.00 : ← 0.10
Aneroid pressure hPa Rated speed rpm Del. quantity	: – : 700
cm3/1000 strokes Tolerance	: 198.0
cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 4.0

LOW IDLE		
Rated speed rpm	:	325
Rack travel in mm Tolerance mm Del. quantity	: +-	4.20 0.10
cm3/1000 strokes	:	34.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	5.0
cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.97 Test oil : ISO 4113

Combination No. : 0 402 575 827

Injection pump

Pump designation : PE6P110A320RS7408 EP type number : 0 412 616 800

Governor

Governer design. : RSV300...850P1A623 Governer no. : 0 421 833 530

Cust. part No. : 11030178 P04 v.08/97

Customer—spec. information Customer : VCE\_

Motor : TD 73 KHE Power KW : 155.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : 42.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 210 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 20.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance "NW : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

L	
Rack travel in mm: 9.90	
Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 181.0	Rated speed rpm : 700 Aneroid pressure
Tolerance cm3/1000 strokes : + 1.0	hPa : 1500 Del. quantity cm3/1000 strokes : 181.0
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : + 4.0	cm3/1000s. : +- 4.0 Spreed
Spi eeu	Tolerance
Tolerance cm3/1000 strokes : 7.0	cm3/1000 strokes : 7.0 Check tolerance
Check tolerance = 11.0 + 1.0	cm3/1000s. : 11.0
1	CONTROL LEVER
Rated speed rpm : 390	control lever position degree : 52.0
Rack travel in mm: 3.50	tolerance degree : +- 4.0
Tolerance mm : +- 0.10	· · · · · · · · · · · · · · · · · · ·
Del. quantity	control lever
cm3/1000 strokes : 26.0	position degree : 104.0
Tolerance + 3.0	tolerance degree : +- 4.0
Check tolerance	RATED SPEED
cm3/1000s. : + 6.0	rack travel mm : 8.90
Spreed	Rated speed rpm : 895
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : 5.0 + Check tolerance	nock through me
cm3/1000s. : 8.0	rack travel mm : 4.00 Rated speed rpm : 955
T	Tolerance 1/min : + 10
(B) SETTING OF INJECTION PUMP	rack travel mm : 0.85
WITH GOVERNOR	Tolerance mm : +- 0.55
†	Rated speed rpm : 1100
<u> </u>	
GUIDE SLEEVE POSITION	
Ī	LOW IDLE
control lever	
position degree : - 3	
Rated speed rpm : 800	control lever
Rack travel in mm: 0.50	position degree : 80.0 tolerance degree : +- 4.0
Tolerance mm : + 0.20	
+	control lever
governor spring + pre-tension +	position degree : 30.0 tolerance degree : +- 4.0
click setting x : 6.00	Coterance degree 4.0
1	Setting point w/out bumper spring

Rated speed rpm rack travel mm Tolerance mm	:	300 3.00 0.10
Testing:		

### lesting:

Rated speed rpm	:		300
	:		3.50
Tolerance mm	:	+	0.10

rack travel mm	:		2.00
Rated speed rpm	:		385
Tolerance 1/min	:	+-	30

TORQUE CONTROL	
Rated speed rpm	: 700
rack travel mm	: 9.90
Tolerance mm	: <b>⊢</b> 0.05

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm	:	500
Pressure hPa	:	1500
rack travel mm	:	9.90
Tolerance mm	:	<b>←</b> 0.05

Rated speed rpm	:	500
Pressure hPa	:	_
rack travel mm	:	5.80
Tolerance mm	: +	- 0.20

### MEASUREMENT

Rated	speed	rpm	:	500
-------	-------	-----	---	-----

Pressure hPa	:	640
rack travel mm	:	2.70
Tolerance mm	: +	- 0.20

Pressure hPa	:	100
rack travel mm	:	0.25
Tolerance mm	: +	- 0.05

### FUEL DELIVERY CHARACTERISTICS

		 _
Aneroid	pressure	

nra	:	_
Rated speed rpm	:	700
Del. quantity		

occ. qua	10107		
cm3/1000	strokes	:	115.0

Tolerance		
cm3/1000 strokes	: +-	1.0
Check tolerance		
cm3/1000s.	: +-	4.0

### LOW IDLE

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.09.97 : ISO 4113 Edition Test oil

Combination No. : 0 402 676 834

Injection pump

Pump designation : PE6P110A320RS7429 EP type number : 0 412 616 801

Governor

Governer design. : RSV300...850P1A623 Governer no. : 0 421 833 530

Cust. part No. : 11030715 P04 v.08.97

Customer-spec. information Customer : VCE

Motor : TD 73 KHE Power KW : 155.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity min. L/h : 210 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance imm : ± 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300 : +- 0.50

Tolerance

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Toterance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

+	•
Rack travel in mm : 13.20 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 181.0	- Rated speed rpm : 700 - Aneroid pressure - hPa : 1500
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 181.0
Check tolerance cm3/1000s. : +- 4.0	- Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance
Spreed	- cm3/1000S. : +- 4.0 - Spreed - Tolerance
Tolerance cm3/1000 strokes : 7.0	- cm3/1000 strokes : 7.0 - Check tolerance
Check tolerance cm3/1000s. : 11.0	- cm3/1000s. : 11.0 - -
	CONTROL LEVER
Rated speed rpm : 300	- - control lever - position degree : 47.0
Rack travel in mm : 5.40 Tolerance mm : + 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 26.0 Tolerance	- control lever - position degree : 97.0 - tolerance degree : +- 4.0
cm3/1000 strokes : + 3.0 Check tolerance	- Coterance degree : 1 4.0 - RATED SPEED
cm3/1000s. : + 6.0 Spreed	rack travel mm : 12.20 Rated speed rpm : 895
Tolerance + cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000 strokes : 5.0 + cm3/1000 strokes	- Tolerance 1/min : +- 5 - - rack travel mm : 4.00
cm3/1000s. : 8.0	Rated speed rpm : 960 Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1100
GUIDE SLEEVE POSITION	rack travel mm : 4.00 Rated speed rpm : 980 Tolerance 1/min : +- 15
control lever position degree : -3 Rated speed rpm : 800	
Rack travel in mm : 0.50 Tolerance mm : + 0.20	- LOW IDLE - -
governor spring pre-tension	control lever position degree : 73.0 tolerance degree : +- 4.0
click setting x : 5.00	control lever position degree : 23.0
Т	F-10 ( 0 ( 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

tolerance degree : +- 4.0 Setting point w/out bumper spring 300 Rated speed rpm 4.90 rack travel mm : : +- 0.10 Tolerance mm Rated speed rpm : 100 CRT mm min. : > 9.40 Testing: 300 Rated speed rpm : rack travel mm : 5.40 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 455 Tolerance 1/min : + 30 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 13.20 Tolerance mm : + 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed Pa : 1500 rack travel mm : 13.20 : + 0.05 Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa 9.80 rack travel mm : Tolerance mm : +- 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa : rack travel mm : 700 3.20 : +- 0.20 Tolerance mm 100 Pressure hPa 0.25 rack travel mm : Tolerance mm : +- 0.05

Aneroid pressure			
hPa	:		-
Rated speed rom	:		700
Del. quantity			
cm3/1000 strokes	:		115.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+	. 0

LOW IDLE			
Rated speed rpm	:		300
Rack travel in mm Tolerance mm Del. quantity	:	+-	5.40 0.10
cm3/1000 strokes	:		26.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes Check tolerance	:		5.0
cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 29.09.97 : ISO 4113

Combination No. : 0 402 746 995

Injection pump

Pump designation : PES6P120A320RS7343

EP type number : 0 412 726 915

Governor

Governer design. : RQV300...1000PA1160K

Governer no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 062356 A/41

Power KW

: 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x Length mm : 600

3.0

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.50 : **←** 0.05 Tolerance mm

Check

: + 0.10 tolerance mm

Rack travel in mm: 11.00 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

 $^{\circ}$ NW after s.o.d. : -0.40

: +- 0.50 . Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel 11.00

Difference ° CS : 2.25

CRT ZERO POSITION

-	+ Tolerance mm : +- 0.25
Rack travel in mm: 12.80 - Tolerance mm: + 0.05 -	Rated speed rpm : 823 guide sleeve
-	travel mm : 5.92
<del></del>	Tolerance mm : + 0.25
BASIC SETTING -	+
-	Rated speed rpm : 405
Rated speed rpm : 1000 -	🕂 guide sleeve
	travel mm : 2.43
Del. quantity - cm3/1909 strokes : 350.0 -	Tolerance mm : +- 0.25 Rated speed rpm : 455
Tolerance	+ Rated speed rpm : 455 + guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 2.98
CIID/ IOOU SCIORES . TO 1.0	Tolerance mm : +- 0.25
Check tolerance	T rocerance min
cm3/10COs. : +- 4.0 -	Rated speed rpm : 550
4.0	guide sleeve
Spreed -	travel mm : 3.66
-	Tolerance mm : + 0.25
Tolerance -	
cm3/1000 strokes : 5.0 -	Rated speed rpm : 1440
	guide sleeve
Check tolerance -	† travel mm : 13.50
cm3/1000s. : 9.0	Tolerance mm : + 0.50
	+
-	
	GUIDE SLEEVE POSITION
Rated speed rpm : 300 -	<b>-</b>
	<b>\</b>
-	+
Rack travel in mm: -7.70	control lever
Rack travel in mm: -7.70 - Tolerance mm: + 0.10 -	position degree : - 1
Rack travel in mm: -7.70 - Tolerance mm: + 0.10 - Del. quantity -	
Rack travel in mm: -7.70 - Tolerance mm: + 0.10 - Del. quantity - cm3/1000 strokes: 36.0 -	position degree : - 1 Rated speed rpm : 1300
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quantity  cm3/1000 strokes: 36.0  Tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity : -  cm3/1000 strokes : 36.0  Tolerance : -  cm3/1000 strokes : + 1.0	position degree : - 1 Rated speed rpm : 1300
Rack travel in mm: -7.70 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 36.0 Tolerance cm3/1000 strokes: + 1.0 Check tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 36.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 5.0	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30
Rack travel in mm: -7.70 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 36.0 Tolerance cm3/1000 strokes: + 1.0 Check tolerance	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 36.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 5.0  Spreed	position degree : - 1 Rated speed rpm : 1300 Rack travel in mm : 11.60 Tolerance mm : +- 1.30
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 36.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 5.0  Spreed  Tolerance  cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quaritity  cm3/1000 strokes : 36.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 5.0  Spreed  Tolerance  cm3/1000 strokes : 8.0  Check tolerance  cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 1300  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quaritity :	position degree : - 1 Rated speed rpm : 1300  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quaritity  cm3/1000 strokes : 36.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 5.0  Spreed  Tolerance  cm3/1000 strokes : 8.0  Check tolerance  cm3/1000 strokes : 8.0	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quaritity :	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quaritity cm3/1000 strokes: 36.0  Tolerance cm3/1000strokes: + 1.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quaritity :	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quaritity cm3/1000 strokes: 36.0  Tolerance cm3/1000 strokes: + 1.0 Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000 strokes: 8.0  Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quaritity cm3/1000 strokes: 36.0  Tolerance cm3/1000 strokes: + 1.0 Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 1103	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quaritity cm3/1000 strokes: 36.0  Tolerance cm3/1000 strokes: + 1.0 Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000 strokes: 8.0  Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Rack travel in mm: -7.70  Tolerance mm: + 0.10  Del. quaritity cm3/1000 strokes: 36.0  Tolerance cm3/1000 strokes: + 1.0 Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 1103 guide sleeve	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity cm3/1000 strokes : 36.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 5.0 Spreed  Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1103 guide sleeve travel mm : 8.70 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity cm3/1000 strokes : 36.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 5.0 Spreed  Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1103 guide sleeve travel mm : 8.70 Tolerance mm : + 0.25  Rated speed rpm : 300	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Rack travel in mm : -7.70  Tolerance mm : + 0.10  Del. quantity cm3/1000 strokes : 36.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 5.0 Spreed  Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1103 guide sleeve travel mm : 8.70 Tolerance mm : + 0.25	position degree : - 1 Rated speed rpm : 130C  Rack travel in mm : 11.60 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 350.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance

position degree : 117.0 tolerance degree : + 4.0 COMPENSATOR TEST RATED SPEED rack travel mm : -1.00 SETTING Rated speed rpm : 1100 Tolerance 1/min : +- 5 Rated speed rpm : 1000 Pressure hPa : 1200 rack travel mm : -8.80 Rated speed rpm : 1210
Tolerance 1/min : + 15 Rated speed rpm : 1000 Pressure hPa : - rack travel mm : -3.90 rack travel mm : -12.30 Tolerance mm : + 0.30 Tolerance mm : +- 0.50 Rated speed rpm : 1300 MEASUREMENT Rated speed rpm : 1000 Pressure hPa : 320 rack travel mm : -2.80 LOW IDLE Toterance mm : ← 0.15 Pressure hPa : 520 rack travel mm : -1.70 control lever position degree : 72.0 Tolerance mm : +- 0.05 tolerance degree : +- 4.0 Testing: Start interlock Rated speed in the rack travel mm : -(./u : + 0.10 Rated speed rpm : 300 Rated speed rpm : > 100 Rated speed rpm : < 225 Rated speed rpm : 200 Check speed 1/min :> 80 CRT mm max. : < -6.70Check speed 1/min : < 245 Rated speed rpm : 390 FUEL DELIVERY CHARACTERISTICS TORQUE CONTROL Rated speed rpm : 1000 Aneroid pressure Rated speed rpm : 600 : 1200 hPa rack travel mm : -0.45 Rated speed rpm : 600 Tolerance mm : +- 0.15 Del. quantity cm3/1000 strokes : 381.0 Rated speed rpm : 800 Tolerance rack travel mm : 0.10 cm3/1000 strokes : +- 3.0Tolerance mm : +- 0.15 Check tolerance cm3/1000s.: +- 6.0 Rated speed rpm : 350 rack travel mm : -1.70 Tolerance mm : +-0.30rack travel mm : 0.10 Tolerance mm : + 0.15 Aneroid pressure

hPa

ANEROTD/ALTITUDE

control lever

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: +- 4.0 cm3/1000s.

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : **←** 0.75

Del. quantity

cm3/1000 strokes : 185.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -7.70 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 5.0

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 22.07.98 : ISO 4113

Combination No. : E 040 101 200

Injection pump

Pump designation : PES6A100D320/3RS3506

EP type number : 9 410 037 236

Governor

Governer design. : RQV400...1250AB1328R

Governer no. : 0 042 096 600

Cust. part No. : TATA-CUMMINS

Customer-spec. information Customer : CUMMINS

Motor

: 6BT - 125 ps

#### TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

Tolerance bar

: 208.5 : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

x inside diameter: 2.0 x length mm : 600

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

\*NW after s.o.d. : 5.75

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.00

Tolerance mm : +- 0.05

Rack travel in mm: 6.40 Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

RATED SPEED

rack travel mm : 9.30 Rated speed rpm : 1300 9.30 Tolerance 1/min : +- 5

rack travel imm : 0.50
Tolerance mm : + 0.50 Rated speed rpm : 1490

LOW IDLE

Testing:

Rated speed rpm : 400 rack travel mm : 6.40 Tolerance mm :  $\leftarrow$  0.10

TORQUE CONTROL

Rated speed rpm : 1250 rack travel mm : 10.00 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 10.3 rack travel mm . 10.30 Tolerance mm : + 0.10

Rated speed rpm : 750 rack travel mm : 10.30 Tolerance mm : ← 0.15

Start interlock

Rated speed rpm :> 170 Rated speed rpm :> 300

Check

speed 1/min : < 190 Check

speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.30 Tolerance mm : + 0.15

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.40 Tolerance mm : + 0.50

LOW IDLE

Rack travel in mm : 6.40 Tolerance mm : + 0.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.07.98 : ISO 4113

Combination No. : F 002 A0Z 109

Injection pump

Pump designation : PES6A95D12ORS2916 EP type number : F 002 A10 010

Governor

Governer design. : RSV425...1050A0c982R

Governer no. : F 002 A20 257

Cust. part No. : 328 4544

Customer-spec. information Customer : CUMMINS : 687 Motor Power KW : 105.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in min: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 9.50 Tolerance : +- 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.05 Tolerance mm : +- 0.05

K07

1	Aneroid pressure
Del. quantity	hPa : 900
cm3/1000 strokes : 94.3	Del. quantity
Tolerance +	cm3/1000 strokes : 94.3 Tolerance
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0
	Check tolerance
Check tolerance	cm3/1000s. : +- 3.0
cm3/1000s. : $\leftarrow$ 3.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0
· ·	Check tolerance
Tolerance +	cm3/1000s. : 6.0
cm3/1000 strokes : 4.0	
Check tolerance	
cm3/1000s. : $6.0$	CONTROL LEVER
<u> </u>	control lever
I	position degree : 95.0
Rated speed rpm : 425	tolerance degree : +- 4.0
Part Annual in m	DATES CREES
Rack travel in mm: 5.05 + Tolerance mm: + 0.10 +	RATED SPEED rack travel mm : 10.05
Del. quantity	Rated speed rpm : 1120
cm3/1000 strokes : 18.5	Tolerance 1/min : +- 5
Tolerance +	
cm3/1000 strokes : - 2.0 +	rack travel mm : 4.50
Check tolerance	Rated speed rpm : 1175
cm3/1000s. : +- 4.5 +- Spreed	Tolerance 1/min : +- 5
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 6.0	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1300
cm3/1000s. : 8.0 +	
†	rack travel mm : 4.50
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1175 Tolerance 1/min : +- 15
WITH GOVERNOR	Total ance Trimin . The 15
+	
<u> </u>	
GUIDE SLEEVE POSITION +	LOW IDLE
+	
+	and the first of
control lever	control lever
position degree : FREE + Rated speed rpm : 800 +	position degree : 76.0 tolerance degree : +- 4.0
Hatta Speed (piii : 000	toterance degree 4.0
Rack travel in mm: 0.50	Control lever difference
Tolerance mm : + 0.20 +	Grad : 19.0
dovernon enning	tolerance degree : +- 6.0
governor spring + pre-tension +	Setting point w/out bumper spring
click setting x : 2.25	secting point wood bumper spilling
- <del>-</del>	Rated speed rpm : 425
+	rack travel mm : 4.05
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : $+-$ 0.10
Rated speed rpm : 1050	Rated speed rpm : 100
1 1000 spood (pm - 1000	Marca opeca (piii ) 100

K08

CRT mm min. : > 19.00Testing: 425 Rated speed rpm rack travel mm : 5.05 : +- 0.10 Tolerance mm rack travel mm : 2.00 Rated speed rpm : 560 Tolerance 1/min : +- 30 TORQUE CONTROL Rated speed rpm : 1050 11.05 rack travel mm : Toterance mm : +- 0.05 800 Rated speed rpm : rack travel mm : 11.70 : **+-** 0.20 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa 900 Rated speed rpm : 500 Pressure hPa rack travel mm : 10.30 Tolerance mm : +- 0.20 **MEASUREMENT** Rated speed rpm : 500 650 Pressure hPa 11.40 rack travel mm : +- 0.20 Tolerance mm : Pressure hPa 400 rack travel mm 10.60 Tolerance mm : +- 0.20 FUEL DELIVERY CHARACTERISTICS Aneroid pressure

900

800

Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. : +- 4.0 Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 85.1 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 3.0 : +-STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm : 20.50 . - 0.50 Tolerance inm Del. quantity cm3/1000 strokes : 121.5 Tolerance cm3/1000 strokes : +- 10.0Check tolerance : +- 15.0 cm3/1000s. LOW TOLE Rated speed rpm : 425 Rack travel in mm : 5.05 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 8.0

End of test specification sheet

K09

Rated speed rpm :

cm3/1000 strokes : 105.0

Del. quantity

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.98 Test oil : ISO 4113

Combination No. : 0 402 040 700

Injection pump

Pump designation : PES12P120A920RS3335

EP type number : 0 412 020 701

Governor

Governer design. : RQV350...1400PA1145

Governer no. : 0 421 814 092

Cust. part No. :

Customer-spec. information

Customer : FINCANTIERI

Motor : 1312 T2

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 Tolerance mm : + 0.05

Check

tolerance in :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-12-9-4-5

: - 8- 11- 2- 3 : - 10- 7- 6

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 15.30

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 288.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes : 7.0	+ Rated speed rpm : 1740 + guide sleeve
Check tolerance cm3/1000s. : 11.0	travel mm : 11.50 Tolerance mm : + 0.50
Rated speed rpm : 350	GUIDE SLEEVE POSITION
D 40	+
Rack travel in mm: 8.10 Tolerance mm: + 0.10	control lever position degree : - 1
Del. quantity cm3/1000 strokes : 39.0 Tolerance	Rated speed rpm : 1490
cm3/1000 strokes : +- 3.0 Check tolerance	Rack travel in mm : 14.30 Tolerance mm : +- 1.30
cm3/1000s. : +- 6.0 Spreed	
Tolerance	T CONTROL LEVER
cm3/1000 strokes : 10.0	+
Check tolerance	+ control lever
cm3/1000s. : 14.0	+ position degree : 117.0 + tolerance degree : + 4.0
(B) SETTING OF INJECTION PUMP	T RATED SPEED
WITH GOVERNOR	rack travel mm : 14.30
	+ Rated speed rpm : 1395
	Tolerance 1/min : + 5
GUIDE SLEEVE TRAVEL	+ rack travel mm : 4.00
Rated speed rpm : 1415	+ rack travel mm : 4.00 + Rated speed rpm : 1630
guide steeve	- Tolerance 1/min : + 15
travel mm : 8.40	+
Tolerance mm : +- 0.15	rack travel mm : 1.00 Tolerance mm : + 0.70
Dated arred now . 350	Tolerance mm : + 0.70
Rated speed rpm : 350 guide sleeve	Rated speed rpm : 1750
travel mm : 1.63	I
Tolerance mm : + 0.20	
Rated speed rpm : 910 guide sleeve	LOW IDLE
travel mm : 5.33	+
Tolerance mm : + 0.25	control lever position degree : 73.0
Rated speed rpm : 394 guide sleeve	tolerance degree : + 4.0
travel mm : 2.38	+ Setting point w/out bumper spring
Tolerance mm : +- 0.25	Rated speed rpm : 250
Rated speed rpm : 444 guide sleeve	CRT mm min. : > 9.60
travel mm : 2.95	+
Tolerance mm : +- 0.25	Testing:
Rated speed rpm : 520 guide sleeve	Rated speed rpm : 350 rack travel mm : 8.10
travel mm : 3.49	Tolerance mm : + 0.10
Tolerance mm : +- 0.25	+

Rated speed rpm	; 525
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 15.30 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 15.35 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.80 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 400 : 12.00 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 500 : 13.75 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1000 : 1350 : 278.0 : ← 3.0 : ← 6.0
Aneroid pressure hPa	: -

Del. quantity
cm3/1000 strokes : 139.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

## STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 420.0 Tolerance cm3/1600 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

## LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 8.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 39.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. • 14.0

End of test specification sheet

Rated speed rpm : 500

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98 Test oil : ISO 4113

Combination No. : 0 402 046 883

Injection pump

Pump designation : PES6P120A1320/5LS339

: 9

EP type number : 0 412 026 808

Governor

Governer design. : RQ750PA1387 Governer no. : 0 421 801 834

Cust. part No. : 1409259

Customer—spec. information Customer : SCANIA Motor : DSC12 40A

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-4-2-6-3-

: 5

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 6

# BASIC SETTING

Rated speed rpm : 700

Tolerance mm : + 0.05

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 8.0

Spreed  Tolerance cm3/1000 strokes : 8.0  Check tolerance cm3/1000s. : 12.0	rack travel mm : 4.00 Rated speed rpm : 775 Tolerance 1/min : + 15 Check speed 1/min : + 20  Tolerance mm : + 0.50 Rated speed rpm : 850
Tolerance nm : - 0.10 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0	LOW IDLE  Setting point w/out bumper spring
Spreed Tolerance cm3/1000 strokes : 4.0	CRT mm min. : > 1.50
Check tolerance cm3/1000s. : 8.0	Testing:
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 250 + Tolerance mm : + 0.10
WITH GOVERNOR	Rated speed rpm : 300
FULL LOAD DELIVERY AT FULL LOAD STOP  Aneroid pressure hPa : 1500 Tolerance	TORQUE CONTROL. Rated speed rpm : 700 Tolerance mm : + 0.05  Tolerance mm : + 0.10
cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 8.0 Spreed Tolerance	ANEROID/ALTITUDE COMPENSATOR TEST
cm3/1000 strokes : 8.0 Check tolerance	SETTING
cm3/1000s. : 12.0	Rated speed rpm : 500 Pressure hPa : 1500 Tolerance mm : + 0.05
CONTROL LEVER	Rated speed rpm : 500 Pressure hPa : -
control lever position degree : 26.0 tolerance degree : + 4.0	Tolerance mm : +- 0.20  MEASUREMENT
control lever position degree : 88.0	Rated speed rpm : 500
tolerance degree : +- 4.0  RATED SPEED	+ Pressure hPa : 350 + Tolerance mm : + 0.15
Rated speed rpm : 750 Tolerance 1/min : + 5 Check	Pressure hPa : 750 Tolerance mm : +- 0.05
speed 1/min : +- 10	†

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : + 8.0

# LOW IDLE

Tolerance mm : + 0.10
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Test oil

: 22.07.98 : ISO 4113

Combination No. : 0 402 076 822

Injection pump

Pump designation : PES6P110A320RS3400 EP type number : 0 412 016 759

Governor

Governer design. : RSV300...1000P1A695

Governer no. : 0 421 833 618

Cust. part No. : 11032943 v. 25.02.98

Customer-spec. information Customer : VCE

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 150 Tolerance l/h : ← 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- G.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.30

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 131.0 +	Del. quantity cm3/1000 strokes : 131.0
Tolerance	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes : + 1.0 +	Check tolerance cm3/1000S. : +- 4.0
Check tolerance + cm3/1000s. : + 4.0 +	Spreed Tolerance
Spreed	cm3/1000 strokes : 5.0 Check tolerance
Tolerance	cm3/1000s. : 9.0
cm3/1000 strokes : 5.0	
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
	control lever position degree : 106.0
Rated speed rpm : 300	tolerance degree : +- 4.0
Rack travel in mm: 9.00	RATED SPEED rack travel mm : 12.30
Tolerance mm : + 0.10	Rated speed rpm : 1022
Del. quantity cm3/1000 strokes : 49.0 +	Tolerance 1/min : +- 5
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : + 2.0 + Check tolerance	Rated speed rpm : 1075 Tolerance 1/min : +- 10
cm3/1000s. : + 5.0 + 5.0	rack travel mm : 0.85
Tolerance	Tolerance mm : + 0.55
cm3/1000 strokes : 7.0 + Check tolerance	Rated speed rpm : 1150
cm3/1000s. : 11.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
‡	control lever
GUIDE SLEEVE POSITION	position degree : 77.0 tolerance degree : + 4.0
‡	Testing:
control lever position degree : - 3	Rated spand spm + 700
Rated speed rpm : 800	Rated speed rpm : 300 rack travel mm : 9.00
Rack travel in mm: 0.50	Tolerance mm : + 0.10
+	rack travel mm : 2.00
governor spring + pre-tension +	Rated speed rpm : 370 Tolerance 1/min : +- 30
click setting x : 4.25	
‡	SET IDLE AUXILIARY SPRING
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Tolerance mm : +- 2.00
Rated speed rpm : 700	
Aneroid pressure + + + + + + + + + + + + + + + + + + +	TORQUE CONTROL

700 Rated speed rpm : rack travel mm : 13.30 Tolerance mm :  $\leftarrow$  0.05

ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.30 Tolerance mm : + 0.05

Rated speed rpm : 700 Pressure hPa 10.90 rack travel mm : +- 0.10 Tolerance mm

#### **MEASUREMENT**

Rated speed rpm : 700

Pressure hPa 660 rack travel mm : 2.00 Tolerance mm: +- 0.20

: 130 Pressure hPa rack travel mm : 0.25
Tolerance mm : + 0.10

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa

700 Rated speed rpm : Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 9.00 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 49.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : <del>←</del> 5.0

Spreed Tolerance

cm3/1000 strokes : 7.0

Check tolerance

11.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.07.98 : ISO 4113

Combination No. : 0 402 630 814

Injection pump

Pump designation : PE12P130A120LS7338

EP type number : 0 412 639 805

Governor

Governer design. : RQV300...825PA1152

Governer no. : 0 421 814 095

Cust. part No. : 4.030.377.3

Customer-spec. information Custcmer : SACM

: UD25.V12 Motor

Power KW

: 1050.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1; 3.2

Test oil inlet

temp. °C

Tolerance °C : + 2.5

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 443 022

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 060

Outside diameter :

8.0

x inside diameter : 4.0 x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 8-5- 10- 3

: - 7- 6- 11 : - 2- 9- 4

: - 12

Phasing

: 0-37.5-60-97.5-120

: -157.5-180-217.5

: -240-277.5-300

: -337.5

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

# Start of delivery mark

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 825

	1
Rack travel in mm : 12.00 Tolerance mm : +- 0.05	Rated speed rpm : 389 guide sleeve travel mm : 3.29
Del. quantity cm3/1000 strokes : 450.5	+ Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : + 1.5	Rated speed rpm : 620 guide sleeve travel mm : 4.83
Check tolerance cm3/1060s. : +- 5.0	_
Spreed	_ + guide sleeve + travel mm : 11.50 + Tolerance mm : + 0.50
Tolerance cm3/1909 strokes : 6.0	‡ <del></del>
Check tolerance cm3/1000s. : 10.0	_ + GUIDE SLEEVE POSITION
	control lever position degree : - 1
Rated speed rpm : 300	Rated speed rum : 980 Rack travel in mm : 10.00
Rack travel in mm : 5.00 Tolerance mm : + 0.10 Del. quantity	Tolerance mm : + 2.00
cm3/1000 strokes : 60.0 Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 3.0 Check tolerance	Rated speed rpm : 825 Aneroid pressure
cm3/1000s. : +- 7.0 Spreed	hPa : - Del. quantity
Tolerance cm3/1000 strokes : 10.0	cm3/1000 strokes : 450.5 Tolerance
Check tolerance cm3/1000S. : 14.0	cm3/1000 strokes : +- 1.5 Check tolerance
	+ cm3/1G00s. : + 5.0 + Spreed
(B) SETTIA; OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : 6.0
GUIDE SLEEVE TRAVEL	Check tolerance cm3/1000s. : 10.0
OCCUPATION OF THE PROPERTY OF	<del> </del>
Rated speed rpm : 890 guide sleeve	CONTROL LEVER
travel mm : 7.85 Tolerance mm : + 0.25	+ control lever
Rated speed rpm : 300	position degree : 120.0 tolerance degree : +- 4.0
guide sleeve	+
travel mm : 1.84 Tolerance mm : + 0.25	+ RATED SPEED + rack travel mm : 11.00
Rated speed rpm : 339	+ Rated speed rpm : 875 + Tolerance 1/min : +- 5
guide sleeve travel mm : 2.61	† + rack travel mm : 4.00
Tolerance mm : + 0.25	Rated speed rpm : 950

Tolerance 1/min : +- 15

Rated speed rpm : 1060

LOW IDLE

control lever

position degree : 70.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 825 rack travel mm : 12.00 Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > Rated speed rpm : > 100 220

Check

speed 1/min : > 80

Check

speed 1/min :> 240

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 5.00 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : + 7.0

Spreed Tolerance

cm3/1000 strokes : 10.0

Check tolerance

14.0 cm3/1000s. :

End of test specification sheet

K21

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.07.98 : ISO 4113

combination No. : 0 402 646 664

Injection pump

Pump designation : PE6P12DA320LS7401 EP type number : 0 412 626 950

Governor

Governer design. : RQV325...1000PA1256K

Governer no. : 0 421 815 493

Cust. part No. :

Customer-spec. information Customer : LIAZ : ML636E Motor Power KW : 175.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : + 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm: +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-130-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.80 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 215.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes	: 5.0	control lever position degree : - 1
Check tolerance cm3/1000s.	: 9.0	Rated speed rpm : 1140
	<del></del> ‡	Rack travel in mm : 12.80 Tolerance mm : + 1.30
Rated speed rpm	: 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 4.40	. FOLL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm		Rated speed rpm : 1000
Del. quantity cm3/1000 strokes	. 38.0	· Aneroid pressure · hPa : 1500
Tolerance	. 38.0	Del. quantity
cm3/1000 strokes	: +- 3.0	cm3/1000 strokes : 215.0
Check tolerance	+	Tolerance
cm3/1000s.	: <b>←</b> 6.0 †	cm3/1000 strokes : + 1.0
Spreed Tolerance	· I	Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes	: 8.0	Spreed
Check tolerance	<del>]</del>	Tolerance
cm3/1000s.	: 12.0	cm3/1000 strokes : 5.0
	1	Check tolerance cm3/1000s. : 9.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	
GUIDE SLEEVE TRAV	FI .	CONTROL LEVER
	+	control lever
Rated speed rpm	: 1057	position degree : 65.0
guide sleeve	+ 0.78	tolerance degree : +- 4.0
travel mm Tolerance mm		· control lever
TOTAL MINISTER	1	position degree : 119.0
Rated speed rpm	: 325	tolerance degree : + 4.0
guide sleeve	1/3	na'er: Ameri
travel mm Tolerance mm	: 1.47 : + 0.20	RATED SPEED rack travel mm : 12.80
roter ance man	I - 0.20	Rated speed rpm : 1045
Rated speed rpm guide sleeve	: 831	Tolerance 1/min : +- 5
travel mm	: 6.95	rack travel mm : 4.00
Tolerance mm	: +- 0.25	Rated speed rpm : 1145
Rated speed rpm	: 550	Tolerance 1/min : +- 15
guide sleeve	<u> </u>	rack travel mm : 0.50
travel mm	: 3.76	Tolerance mm : +- 0.50 Rated speed rpm : 1200
Tolerance mm	: + 0.25	Rated speed rpm : 1200
Rated speed rpm	: 1290	
guide sleeve travel mm	: 13.50	
Tolerance mm		LOW IDLE
GUIDE SLEEVE POSI	TION	control lever
_ ,	+	position degree : 69.0
	+	tolerance degree : +- 4.0

control lever

position degree : 15.0 tolerance degree : + 4.0

Setting point w/out bumper spring

225 Rated speed rpm :

CRT mm min. : > 6.00

Testing:

325 Rated speed rpm : rack travel mm 4.40 Tolerance mm : **←** 0.10

Rated speed rpm 350

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 13.80 : +- 0.05 Tolerance mm

700 Rated speed rpm rack travel mm : 13.45 Tolerance mm : +- 0.20

Rated speed rpm : 600 rack travel mm 12.85 : + 0.20 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 1000 Pressure hPa 1500 13.80 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm : 1000 Pressure hPa : rack travel mm 11.15 : <del>+-</del> 0.10 Tolerance mm

**MEASUREMENT** 

: 1000 Rated speed rpm

Pressure hPa 260 11.70 rack travel mm Tolerance mm : +- 0.20

Pressure hPa 370 rack travel mm : 13.20 Tolerance mm :  $\leftarrow$  0.05

Start interlock

Rated speed rpm ; > 100 : < Rated speed rpm

Check

speed 1/min : > 80

Check

Speed 1/mire : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 Rated speed rpm : 700 Del. quantity

cm3/1000 strokes : 230.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

rack travel mm : 12.85 : +- 0.20 Tolerance mm

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity cm3/1000 strokes :

191.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 300.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 325

K24

Rack travel in mm Tolerance mm	:	+	4.40 0.10
Del. quantity cm3/1000 strokes	:		38.0
Tolerance cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s.	:	+-	6.0
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:		8.0
cm3/1000s.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 22.07.98 Test oil : 22.07.98

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278K

Governer no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information Customer : DAF

Motor : XF 315 M Power KW : 315.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 900

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity
min. t/h : 140
Tolerance t/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

3.0 x inside diameter :

x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 15.9 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : **←** 0.75

## Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40 Tolerance mm : + 0.05

	l guido slagvo
N-1 montify	+ guide sleeve
Del. quantity cm3/1000 strokes : 318.0	travel mm : 3.92 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1310 guide sleeve
	+ travel mm : 13.50
Check tolerance cm3/1000s. : + 4.0	Tolerance mm : +- 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance	+
cm3/1000 strokes : 5.0	+ control lever + position degree : -1
Check tolerance cm3/1000S. : 9.0	Rated speed rpm : 1158
CIRC/ 10003.	Rack travel in mm: 12.00
	+ Tolerance mm : + 2.70
Order and my . 275	+
Rated speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.30	+
Tolerance mm : + 0.10	+ Rated speed rpm : 980
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 13.5	+ hPa : 1500
Tolerance cm3/1000 strokes : +- 3.0	+ Del. quantity - cm3/1600 strokes : 318.0
Check tolerance	+ Tolerance
cm3/1000s. : + 6.0	+ cm3/1000 strokes : +- 1.0
Spreed	+ Check tolerance
Tolerance	+  cm3/1000s. : + 4.0
cm3/1000 strokes : 8.0	+ Spreed + Tolerance
Check tolerance cm3/1000s. : 12.0	+ cm3/1000 strokes : 5.0
	Check tolerance
	+ cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+
GUIDE SLEEVE TRAVEL	CONTROL LEVER
	+ control lever
Rated speed rpm : 1077	position degree : 119.0
guide sleeve	tolerance degree : + 4.0
travel mm : 10.24	DATES COPES
Tolerance mm : + 0.15	RATED SPEED : 12.40
Rated speed rpm : 275	Rated speed rpm : 1040
guide sleeve	+ Tolerance 1/min : + 5
travel mm : 2.04	+ Check
Tolerance mm : + 0.20	speed 1/min : +- 10
Rated speed rpm : 704	rack travel mm : 4.00
guide sleeve	+ Rated speed rpm : 1145
travel mm : 6.53	+ Tolerance 1/min : +- 15
Tolerance mm : + 0.25	+ Check
Rated speed rpm : 400	speed 1/min : +- 20
nacea opera cym i roc	rack travel mm : 0.50

Tolerance mm	: +- 0.50
Rated speed rpm	: 1275
LOW IDLE	
control lever position degree tolerance degree	: 72.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm	: 275
rack travel mm	: 5.30
Tolerance mm	: ← 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 980 : 13.40 : +- 0.05
Rated speed rpm	: 750
rack travel mm	: 13.35
Tolerance mm	: ← 0.05
Rated speed rpm	: 700
rack travel mm	: 13.05
Tolerance mm	: + 0.10
Rated speed rpm	: 600
rack travel mm	: 12.55
Tolerance mm	: + 0.10
Rated speed rpm	: 500
rack travel mm	: 12.05
Tolerance mm	: +- 0.10
Rated speed rpm	: 1000
rack travel mm	: 13.40
Tolerance mm	: +- 0.10
Rated speed rpm	: 980
rack travel mm	: 13.80
Tolerance mm	: +- 0.10

ANEROID/ALTI	TUDE
COMPENSATOR	<b>TEST</b>

# SETTING

Rated speed rpm	:	980
Pressure hPa	•	1500
rack travel mm	:	13.40
Tolerance mm	:	← 0.05

Rated speed rpm : 980
Pressure hPa : rack travel mm : 8.55
Tolerance mm : +- 0.20

# MEASUREMENT

Rated speed rpm	: 980
Pressure hPa	: 520
rack travel mm	: 12.20
Tolerance mm	: ← 0.05
Pressure hPa	: 210
rack travel ma	: 9.80
Tolerance mm	: + 0.15

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm	: 1500 : 750
Del. quantity cm3/1000 strokes Tolerance	: 342.0
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s. Spreed	: 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0
rack travel mm Tolerance mm	: 13.05 : + 0.10
Aneroid pressure hPa Rated speed rpm	: - : 600
Del. quantity cm3/1000 strokes	: 195.0

Tolerance cm3/1000 strokes	. +-	1.0
Check tolerance	•	1.0
cm3/1000S.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000\$.	:	12.0

# LOW IDLE

Rated speed rpm	;	275	
Rack travel in mm Tolerance mm	: +-	5.30 0.10	
Del. quantity cm3/1000 strokes Tolerance	:	13.5	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	6.0	
Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.07.98 Edition Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278

: -1K

: 0 421 815 510 Governer no.

Cust. part No. : 1310220/1

Customer-spec. information Customer : DAF Motor : XF 280 M Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 145 Tolerance l/h : ← 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 15.0 Tolerance bar : + 1.0

: 4.45 : + 0.05 Prestroke mm Tolerance mm Check tolerance mm : + 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance  $^{\circ}NW$  : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

L02

Tolerance mm	: +- 0.05 +	guide sleeve
		travel mm : 3.92
Del. quantity	†	Tolerance mm : + 0.25
cm3/1000 strokes	: 303.0 +	Dated aread pro . 1710
Tolerance	<u> </u>	Rated speed rpm : 1310 quide sleeve
cm3/1000 strokes	: ← 1.0 I	travel mm : 13.50
01107 1000 311 ORCS	1.0	Tolerance mm : +- 0.50
Check tolerance	+	
cm3/1000s.	: +- 4.0 +	
<b>.</b>		GUIDE SLEEVE POSITION
Spreed	†	
Tolerance	I	control lever
cm3/1000 strokes	: 5.0	position degree : - 1
01107 1000 Del ORDO		Rated speed rpm : 1171
Check tolerance	+	
cm3/1000s.	: 9.0	Rack travel in mm : 10.70
		Tolerance mm : $\leftarrow$ 2.00
	Ť	
Rated speed rpm	. 275	FULL LOAD DELIVERY AT FULL LOAD STOP
nated speed I pill		TOLE LOAD DELIVERY AT TOLE LOAD STOP
Rack travel in mm	n: 5.30 +	Rated speed rpm : 750
Tolerance mm	: +- 0.10	Aneroid pressure
Del. quantity	+	hPa : 1500
cm3/1000 strokes	: 13.5	Del. quantity
Tolerance cm3/1000 strokes	: + 3.0	cm3/1000 strokes : 303.0
Check tolerance	: - 3.0	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s.	: + 6.0	Check tolerance
Spreed	+	cm3/1000s. : +- 4.0
Tolerance	+	Spreed
cm3/1000 strokes	: 8.0	Tolerance
Check tolerance	+	cm3/1000 strokes : 5.0
cm3/1000s.	: 12.0	Check tolerance
	Ĭ	cm3/1000s. : 9.0
(E) SETTING OF IN	JECTION PUMP	
WITH GOVERNOR	+	
	+	CONTROL LEVER
CUIDE OF EDVE TOAN	/CI	anning Laws
GUIDE SLEEVE TRAV	<u> </u>	control lever position degree : 118.0
Rated speed rpm	: 1062 I	tolerance degree : + 4.0
guide sleeve		total and degree 4.0
travel mm	: 10.04	RATED SPEED
Tolerance mm	: +- 0.15	rack travel mm : 11.35
	+	Rated speed rpm : 1050
Rated speed rpm	: 275 +	Tolerance 1/min : +- 5
guide sleeve travel mm	: 2.04	Check speed 1/min : +- 10
Tolerance mm	: + 0.20	speed (/)  (1)
. Stor Gride IIIII	1	rack travel mm : 4.00
Rated speed rpm	: 697	Rated speed rpm : 1150
guide sleeve	+	Tolerance 1/min : +- 15
travel mm	: 6.48	Check
Tolerance mm	: +- 0.25	speed 1/min : +- 20
Rated speed rpm	: 400	rack travel mm : 0.50
nated speed (pill	. 400 Т	I GON LI GACC HAII . D. DO

L03

Tolerance mm : +- 0.50 Rated speed rpm : 1275	Rated speed rpm : 775 Pressure hPa : 1500 rack travel mm : 12.65 Tolerance mm : + 0.05
LOW IDLE	Rated speed rpm : 775 Pressure hPa : - rack travel mm : 8.50 Tolerance mm : + 0.20
control lever position degree : 71.0 tolerance degree : +- 4.0	MEASUREMENT
Setting point w/out bumper spring	Raced speed rpm : 775
	Pressure hPa : 450
Rated speed rpm : 175	rack travel mm : 12.10 Tolerance mm : + 0.05
CRT mm min. : > 7.80	+
Testing:	+ Pressure hPa : 170 + rack travel mm : 9.90
-	Tolerance mm : + 0.10
Rated speed rpm : 275 rack travel mm : 5.30	İ
Tolerance mm : + 0.10	
Rated speed rpm : 300	+ FUEL DELIVERY CHARACTERISTICS
	Aneroid pressure
TORQUE CONTROL	+ hPa : 1500
Rated speed rpm : 750	+ Rated speed rpm : 980
rack travel mm : 12.60 Tolerance mm : +- 0.05	+ Del. quantity + cm3/1000 strokes : 272.0
Toter as the final . The U.U.S	+ Tolerance
Rated speed rpm : 980 rack travel mm : 12.35	+ cm3/1000 strokes : +- 2.0
	+ Check tolerance
Tolerance mm : +- 0.10	+ cm3/1000s. : + 5.0 + Spreed
Rated speed rpm : 900	+ Tolerance
rack travel mm : 12.60	+ cm3/1000 strokes : 8.0
Tolerance mm : +- 0.10	+ Check tolerance
Pated speed nom : 700	cm3/1000s. : 12.0
rack travel mm : 12.30	I
Rated speed rpm : 700 rack travel mm : 12.30 Tolerance mm : + 0.10	rack travel mm : 12.60 Tolerance mm : + 0.10
	+ Tolerance mm : + 0.10
Rated speed rpm : 600	†
rack travel mm : 11.80 Tolerance mm : + 0.10	Aneroid pressure
Rated speed rpm : 500 rack travel mm : 11.40 Tolerance mm : +- 0.10	hPa : - Rated speed rpm : 600
rack travel mm : 11.40	+ Del. quantity + cm3/1000 strokes : 184.0
roterance mm : +- U.10	+ cm3/1000 strokes : 184.0 + Tolerance
	+ cm3/1000 strokes : +- 1.0
ANEROID/ALTITUDE	Check tolerance
COMPENSATOR TEST	Check tolerance cm3/1000s. : +- 4.0
	+ Spreed
SETTING	Tolerance cm3/1000 strokes : 8.0
	Т

Check tolerance		
cm3/1000s.	:	12.0

# LOW IDLE

Rated speed rpm	:		275
Rack travel in mm	:		5.30
Tolerance mm	:	+-	0.10
Del. quantity			
cm3/1000 strokes	:		13.5
Tolerance		+-	7.0
cm3/1000 strokes Check tolerance	•	-	3.0
cm3/1000s.	:	+-	6.0
Spreed			3.4
Tolerance			
41127 1000 DETORCO	:		8.0
Check tolerance			40.0
cm3/1000s	•		12 N

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.07.98 Test oil : ISO 4113

Combination No. : 0 402 648 603

Injection pump

Pump designation : PE8P120A720LS7427T

EP type number : 0 412 628 919

Governor

Governer design. : RQ750PA1227-1

Governer no. : 0 421 801 812

Cust. part No. : 1391886

Customer-spec. information

Customer : SCANIA

Motor

: DSI(C)14...A.M

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration

damper

(RoBo diaphragm) : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

L06

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x Length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance min : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order

: 1-2A- ?- 3A- 4

: -5A - 6

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance

: +- 0.30

Check

: **←** 0.75 tolerance °NW

Start of delivery mark

Tolerance

: +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.45

Tolerance mm : + 0.05

Ral grantity		+ Rated speed rpm	: 700
Del. quantity cm3/1000 strokes	: 324.0	Aneroid pressure	: 1500
		+ Del. quantity	
Tolerance cm3/1000 strokes	: + 1.0	cm3/1000 strokes :	: 324.0
Check tolerance		cm3/1000 strokes : Check tolerance	: +- 1.0
cm3/1000s.	: <del>+</del> 10.0		· + 10.0
Spreed		Tolerance	: 8.G
Tolerance cm3/1000 strokes	: 8.0	- Check tolerance	: 12.0
Check tolerance cm3/1000s.	: 12.0	—	
Cm37 70003.	. 12.0	CONTROL LEVER	
		Control lever	
		+ position degree :	
Rack travel in mm Tolerance mm	n: 6.50 : ← 0.10	tolerance degree	: +- 4.0
Del. quantity	***	+ control lever	
cm3/1000 strokes	: 38.0	position degree	: 89.0
Tolerance		tolerance degree	: <del></del>
cm3/1000 strokes	: + 4.0	†	
Check tolerance cm3/1000s.	: +- 6.0	ASSEMBLY COVERNOR S	CETTING
Spreed	, <del></del> 0.0	+ ASSEMBLY GOVERNOR S	
Tolerance			: 750
			45 50
	: 5.0	+ rack travel mm :	: 15.50
Check tolerance		+	
Check tolerance	: 5.0 : 9.0	Rated speed rpm	785
Check tolerance		Rated speed rpm Tolerance 1/min	: 785 : +- 4
Check tolerance cm3/1000s.	: 9.0	Rated speed rpm	785
Check tolerance cm3/1000s. (B) SETTING OF IN	: 9.0	Rated speed rpm Tolerance 1/min rack travel mm	: 785 : +- 4 : 4.00
Check tolerance cm3/1000s. (B) SETTING OF IN	: 9.0	Rated speed rpin Tolerance 1/min rack travel mm	: 785 : +- 4 : 4.00 : 0.50
Check tolerance cm3/1000s. (B) SETTING OF IN	: 9.0	Rated speed rpin Tolerance 1/min rack travel mm Tolerance mm	785 2 +- 4 4 4 00 3 0 50 4 - 0 50
Check tolerance cm3/1000s. (B) SETTING OF IN WITH GOVERNOR	: 9.0 NJECTION PUMP	Rated speed rpin Tolerance 1/min rack travel mm	785 4 4 4.00 0.50 + 0.50
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm	: 9.0 NJECTION PUMP	Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm Rated speed rpm	785 4 4.00 0.50 1.00
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	: 9.0 NJECTION PUMP /EL : 759	Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm Rated speed rpm	785 4 4.00 0.50 + 0.50 850
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	: 9.0 NJECTION PUMP /EL : 759 : 4.86	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm	785 4 4.00 0.50 1 0.50 2 50 3 751 15.50
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	: 9.0 NJECTION PUMP /EL : 759	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm Rated speed rpm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 9.0 NJECTION PUMP /EL : 759 : 4.86	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm	785 4 4.00 0.50 1 0.50 2 50 3 751 15.50
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : + 0.15  : 797	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm  Rated speed rpm rack travel mm  Rated speed rpm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm rack travel mm rack travel mm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : + 0.15  : 797	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm  Rated speed rpm rack travel mm  Rated speed rpm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm  Tolerance mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm rack travel mm rack travel mm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6 6 6 6 6
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00 : ← 0.25  : 850	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm rack travel mm rack travel mm rack travel mm rack travel mm Rated speed rpm	785 + 4 4.00 0.50 850 751 15.50 786 + 4 4.00 0.50 850 - 786 - 4 4.00 - 6.50 850
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERATE Speed rpm guide sleeve travel mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Rated speed rpm guide sleeve travel mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00 : ← 0.25	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm rack travel mm rack travel mm rack travel mm	785 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6 6 6 6 6
Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAVERATE Speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Rated speed rpm guide sleeve travel mm	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00 : ← 0.25  : 850 : 11.50	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Rated speed rpm Rated speed rpm rack travel mm Rated speed rpm Rated speed rpm	785 + 4 4.00 0.50 850 751 15.50 786 4.00 0.50 0.50 850 752 15.50
cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER	: 9.0  NJECTION PUMP  /EL  : 759  : 4.86 : ← 0.15  : 797  : 10.00 : ← 0.25  : 850 : 11.50	Rated speed rpin Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm rack travel mm Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Rated speed rpm Rated speed rpm rack travel mm Rated speed rpm Rated speed rpm Rated speed rpm Rated speed rpm	785 4 4.00 0.50 0.50 850 751 15.50 786 4 4.00 0.50 0.50 850 752

rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.50
Rated speed rpm	: 753
rack travel mm	: 15.50
Rated speed rpm	: 788
Tolerance 1/min	: ← 4
rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: <del></del> 0.50
Rated speed rpm	: 754
rack travel mm	: 15.50
Rated speed rpm	: 789
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 15.50
Rated speed rpm	: 790
Tolerance 1/min	: ← 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 850
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 16.45 : ← 0.05

ANEROID/ALTITUD	Ε
COMPENSATOR TES	T

# SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.45
Tolerance mm : + 0.05

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	12.50
Tolerance mm	; +	- 0.20

# **MEASUREMENT**

Rated speed rpm	:	500
Pressure hPa rack travel mm Tolerance mm	: +-	420 13.60 - 0.20
Pressure hPa rack travel mm Tolerance mm	: +-	680 15.05 - 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		221.0
Tolerance			
cn3/1000 strokes	:	+-	1.0
Check tolerance			7.0
cm3/1000s.	:	+-	7.0

# STARTING FUEL DELIVERY

rack travel mm	:		12.50
Tolerance mm	:	+-	0.20
Del. quantity			
cm3/1000 strokes	:		180.0
Tolerance			
cm3/1000 strokes	:	+-	20.0
Check tolerance			
cm3/1000s.	:	+	24.0

Rated speed rpm : 100

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.07.98 Test oil : ISO 4113

Combination No. : 0 402 648 817

Injection pump

Pump designation : PE8P120A320LS7801

: -10

EP type number : 0 412 628 851

Governor

Governer design. : RQ300/1050PA762-16

Governer no. : 0 421 801 620

Cust. part No. :

Customer-spec, information Customer : MB-NFZ Motor : OM442 A Power KW : 269.0

# TEST BENCH REQUEREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity

cm3/1000 strokes : 205.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance	CHARE OF EER DOCKTON
cm3/1000s. : +- 4.0	+ GUIDE SLEEVE POSITION
0	†
Spreed	†
Talanana	+ control lever
Tolerance ( )	position degree : 109
cm3/1000 strokes : 4.0	+ Rated speed rpm : 600
Charle to Language	Dools travel in an 20 00
Check tolerance cm3/1000s. : 7.0	+ Rack travel in mm : 20.00
cm3/1000s. : 7.0	Tolerance mm : + 0.80
-according commission of the contract of the c	T
	FILL LOAD DELTHERY AT SHILL LOAD STOP
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
rated speed rpm : 500	Rated speed rpm : 500
Rack travel in mm : 6.20	+ Rated speed rpm : 500 + Aneroid pressure
Tolerance mm : +- 0.20	
Del. quantity cm3/1000 strokes : 16.0	+ Del. quantity
	+ cm3/1000 strokes : 205.0
Tolerance	Tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : +- 6.0	the Check tolerance
Cm3/10005. : 7 8.0	+ cm3/1000s. : +- 4.0
Spreed	Spreed
Tolerance 5.0	+ Tolerance
cm3/1000 strokes : 5.0	+ cm3/1000 strokes : 4.0
Check tolerance	+ Check tolerance
cm3/1000s. : 8.0	+ cm3/1000s. : 7.0
	†
	†
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	+ CONTROL LEVER
	† 1 t
CHIEF CLEENE TRANS	+ control lever
GUIDE SLEEVE TRAVEL	+ position degree : 97.0
Datadana dana . 4050	tolerance degree : +- 4.0
Rated speed rpm : 1050	TATES COPES
guide sleeve travel mm : 6.80	
	+ RATED SPEED
	rack travel mm : 11.70
Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103
Tolerance mm : + 0.10	rack travel mm : 11.70
Tolerance mm : + 0.10  Rated speed rpm : 300	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8 rack travel mm : 4.00
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  rack travel mm : 4.00 Rated speed rpm : 1185
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8 rack travel mm : 4.00
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75 Rated speed rpm : 1300
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : +- 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15  rack travel mm : 0.75 Tolerance mm : +- 0.75 Rated speed rpm : 1300
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 6.20 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 6.20 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300  LOW IDLE  control lever
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 1170 guide sleeve travel mm : 9.50	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300  LOW IDLE  control lever position degree : 74.0
Tolerance mm : + 0.10  Rated speed rpm : 300 guide sleeve travel mm : 2.30 Tolerance mm : + 0.10  guide sleeve travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 870 guide sleeve travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 6.20 Tolerance mm : + 0.10	rack travel mm : 11.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15  rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300  LOW IDLE  control lever

	+ Check
Setting point w/out bumper spring	speed 1/min : > 80
Rated speed rpm : 200	speed 1/min : < 240
CRT mm min. :> 8.00	FUEL DELIVERY CHARACTERISTICS
Testing:	
Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20	Aneroid pressure  hPa : 1050  Rated speed rpm : 1050  Del. quantity
rack travel mm : 2.00 Rated speed rpm : 400 Tolerance 1/min : + 20	cm3/1000 strokes : 179.5 Tolerance + cm3/1000 strokes : + 1.5
TORQUE CONTROL	Check tolerance : + 4.5   Spreed
Dimension a mm : 0.75	Tolerance cm3/1000 strokes : 7.0 Check tolerance
Rated speed rpm: : 1050 rack travel mm: : 12.80 Tolerance mm: : + 0.10	cm3/1000s. : 10.0
Rated speed rpm : 500 rack travel mm : 14.10 Tolerance mm : + 0.10	rack travel mm : 14.10 Tolerance mm : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 147.0
SETTING	Tolerance   cm3/1000 strokes : +- 1.0
Rated speed rpm : 600 Pressure hPa : -	Check tolerance : + 4.0 Spreed
Rated speed rpm : 600 Pressure hPa : 300	+ Tolerance + cm3/1000 strokes : 7.0 + Check tolerance
rack travel mm : 1.00 Tolerance mm : +- 0.10	+ cm3/1000s. : 10.0
MEASUREMENT	STARTING FUEL DELIVERY
Rated speed rpm : 600	+ Rated speed rpm : 100
Pressure hPa : 400 rack travel mm : 2.05 Tolerance mm : +- 0.15	+ Del. quantity + cm3/1000 strokes : 182.5 + Tolerance
	cm3/1000 strokes : +- 7.5 Check tolerance
Start interlock	+ cm3/1000s. : +- 11.5
Rated speed rpm : > 100 Rated speed rpm : < 220	<u> </u>
	+ LOW IDLE

Rated speed rpm	:	300
Rack travel in mm Tolerance mm Del. quantity	: : +-	6.20 0.20
cm3/1000 strokes	:	16.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	6.0
Tolerance cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.07.98 Test oil : 17.07.98

Combination No. : 0 402 946 014

Injection pump

Pump designation : PES6P120A720LS8037 EP type number : 0 412 926 024

Governor

Governer design. : RQV250...1050PA1236K

Governer no. : 0 421 815 970

Cust. part No. : 1370101

Customer-spec. information Customer : SCANIA Motor : DSC1202

#### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 85
Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Frestroke mm : 4.40
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + - 0.75

Start of delivery blocking

"NW after s.o.d. : 180.00 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

<del></del> +	Tolerance mm : +- 0.25
Rack travel in mm : 14.05 Tolerance mm : + 0.05	Rated speed rpm : 290 guide sleeve travel mm : 2.62
Del. quantity cm3/1000 strokes : 330.0	Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1310 guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 10.0	GUIDE SLEEVE POSITION
Spreed	
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1 Rated speed rpm : 1170
Check tolerance cm3/1000s. : 14.0	Rack travel in mm : 12.10 Tolerance mm : +- 1.30
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.60 Tolerance mm: + 0.30 Del. quantity	Rated speed rpm : 775 Aneroid pressure hPa : 1500
cm3/1000 strokes : 19.0	Del. quantity
Tolerance cm3/1000 strokes : + 3.0	cm3/1000 strokes : 330.0 Tolerance
Check tolerance : → 6.0 +	cm3/1000 strokes : + 1.0 Check tolerance
Spreed +	cm3/1000S. : +- 10.0 Spreed
cm3/1000 strokes : 5.0 + Check tolerance	Tolerance cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	Check tolerance cm3/1000S. : 14.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 1116	position degree : 63.0 tolerance degree : +- 4.0
guide sleeve + travel mm : 10.09 +	control lever
Tolerance mm : + 0.15	position degree : 121.0 tolerance degree : +- 4.0
Rated speed rpm : 250 guide sleeve	RATED SPEED
travel mm : 1.79 Tolerance mm : + 0.20	rack travel mm : 12.10
Tolerance mm : + 0.20	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm : 644 guide sleeve	Check speed 1/min : +- 10
travel mm : 4.47	opocui (7mm) (U

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: ← 20 : 0.50 : ← 0.50
LOW IDLE	
control lever position degree tolerance degree	: 75.0 : +- 4.0
control lever position degree tolerance degree	: 17.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 7.30
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 4.60 : + 0.30
Rated speed rpm	: 275
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 775 : 14.05 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.05 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	

ANEROID/ALTITUDE	
COMPENSATOR TEST	
SETTING	
Dated speed rom	: 775
Rated speed rpm Pressure hPa	: 1500
rack travel mm	: 14.05
Tolerance mm	: +- 0.10
Rated speed rpm	: 775
Pressure hPa	: =
rack travel mm	: 8.50
Tolerance mm	: +- 0.20
MEASUREMENT	
Rated speed rpm	: 775
Pressure hPa	: 300
rack travel mm	. 500 : 9.80
Tolerance mm	: + 0.15
Pressure hPa	: 610
rack travel min	: 610
Tolerance mm	: +- 0.05
Start interlock	
Dated aroud non	: > 100
Rated speed rpm Rated speed rpm	: > 100 : < 170
The second second second	
Check	. > 00
speed 1/min	: > 80
speed 1/min Check	
speed 1/min	: > 80 : < 190
speed 1/min Check	: < 190
speed 1/min Check speed 1/min	: < 190
speed 1/min Check speed 1/min FUEL DELIVERY CHA	: < 190
speed 1/min Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa	: < 190  RACTERISTICS  : 1500
speed 1/min Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	: < 190 RACTERISTICS
speed 1/min Check speed 1/min FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity	: < 190  RACTERISTICS  : 1500 : 650
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: < 190  RACTERISTICS  : 1500 : 650
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: < 190  RACTERISTICS  : 1500 : 650 : 319.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: < 190  RACTERISTICS  : 1500 : 650 : 319.0 : +- 4.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: < 190  RACTERISTICS  : 1500 : 650 : 319.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: < 190  RACTERISTICS  : 1500 : 650 : 319.0 : +- 4.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure	: < 190  RACTERISTICS  : 1500 : 650 : 319.0 : +- 4.0 : +- 10.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa	: < 190  RACTERISTICS  : 1500 : 650 : 319.0 : +- 4.0 : +- 10.0
speed 1/min Check speed 1/min  FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure	: < 190  RACTERISTICS  : 1500 : 650 : 319.0 : +- 4.0 : +- 10.0

Rated speed rpm : 675
rack travel mm : 13.30
Tolerance mm : + 0.30

Tolerance mm :  $\leftarrow$  0.10 Del. quantity cm3/1000 strokes : 272.0 Tolerance cm3/1000 strokes :  $\leftarrow$  4.0

Check tolerance cm3/1000S. : +- 8.0

Aneroid pressure

1500 hPa Rated speed rpm : 675 Del. quantity

cm3/1000 strokes : 323.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  4.0 Check tolerance

cm3/1000s. : +- 10.0

Aneroid pressure

hPa 50C Rated speed rpm :

Del. quantity

cm3/1000 strokes : 192.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000S. : +- 4.0

# STARTING FUEL DELIVERY

Set starting CRT at K-cam.

100 Rated speed rpm : rack travel mm : 10.70 : +- 0.50 Tolerance mm Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

: +- 24.0 cm3/1000s.

# LOW IDLE

Rated sneed rpm : 250

Rack travel in mm : 4.60 Tolerance mm :  $\leftarrow$  0.30 Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

8.0 cm3/1000S.

End of test specification sheet

L16

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.07.98

Combination No. : 0 402 946 015

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

Governer no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information Customer : SCANIA : DSC 913 Motor

## TEST BENCH REQUIREMENTS

Inlet line : EHPB

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1 Inlet press. bar :

Overflow quantity

min. l/h : 105 Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

		<del>_</del>	
Rack travel in mm	12.90	Rated speed rpm	: 470
Tolerance mm	: +- 0.05	guide sleeve	. 410
TOTEL MILL	0.09	+ travel mm	: 4.09
Del. quantity		Tolerance mm	: +- 0.25
cm3/1000 strokes	: 300.0	T locerance min	. + 0.25
CIBY TOOU STrokes	: 300.0	T 22444	4/30
		_ + Rated speed rpm	: 1470
Tolerance		+ guide steeve	
cm3/1000 strokes	: ← 1.0	+ travel mm	: 11.50
		_ + Tolerance mm	: +- 0.50
Check tolerance		+	
cm3/1000s.	: ← 8.0		
		_ + FULL LOAD DELIVER	Y AT FULL LOAD STOP
Spr <del>ee</del> d		+	
		+ Rated speed rpm	: 600
Tolerance		+ Aneroid pressure	
cm3/1000 strokes	: 8.0	+ hPa	: 1500
		+ Del. quantity	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Check tolerance		cm3/1000 strokes	: 300.0
cm3/1000s.	: 12.0	+ Tolerance	. 555.5
- 10000 i		cm3/1000 strokes	: +- 1.0
		Check tolerance	1.0
		- cm3/1000s.	: +- 8.0
Pated speed are	: 250		0.0
Rated speed rpm	: 250	+ Spreed	
Book Americal Improve	7.70	+ Tolerance	
Rack travel in mm		+ cm3/1000 strokes	: 8.0
Tolerance mm	: <b>←</b> 0.10	- Check tolerance	40.6
Del. quantity		+ cm3/1000s.	: 12.0
cm3/1000 strokes	: 40.0	+	
Tolerance		+	
cm3/1000 strokes	: +- 3.0	+	
Check tolerance		+ CONTROL LEVER	
cm3/1000S.	: ← 6.0	+	
Spreed		+ control lever	
Tolerance		position degree	: 57.0
cm3/1000 strokes	: 5.0	+ tolerance degree	
Check tolerance		+	
cm3/1000s.	: 8.0	+ control lever	
		position degree	: 120.0
		+ tolerance degree	
(B) SETTING OF IN	LIECTION PIMP	toter ance degree	4.0
WITH GOVERNOR	INCUITOR FOR	T RATED SPEED	
MATIN GOACUIAOK			: 11.90
		+ rack travel mm	
CHINE OF COLUMN	(C)	Rated speed rpm	
GUIDE SLEEVE TRAV	EL	† Tolerance 1/min	; <del></del> 3
Dahad awasd	. 4059	+ Check	
Rated speed rpm	: 1058	+ speed 1/min	: +- 10
guide sleeve	7.00	†	4 00
travel mm	: 7.89	+ rack travel mm	
Tolerance mm	: <b>←</b> 0.15	+ Rated speed rpm	
		+ Tolerance 1/min	: <del>+-</del> 15
Rated speed rpm	: 250	+ Check	
guide sleeve		+ speed 1/min	: +- 20
travel mm	: 1.33	+	
Tolerance mm	: +- 0.20	+ rack travel mm	: 0.50
	•	+ Tolerance mm	: +- 0.50
Rated speed rpm	: 748	+ Rated speed rpm	
guide sleeve		+	
travel mm	: 6.17	1	
Tolerance mm	: ← 0.25	1	
		i.	

LOW IDLE

control lever

position degree : 89.0 tolerance degree : +- 4.0

control lever

position degree : 25.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. :> 9.80

Testina:

Rated speed rpm : 250 rack travel mm 7.60 : +- 0.10 Tolerance mm

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600 rack travel mm : 12.90 : +- 0.05 Tolerance mm

Rated speed rpm : 1000 rack travel mm : 12.90 rack travel mm : Tolerance mm :  $\leftarrow$  0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 12.90 Tolerance mm : +- 0.05

Rated speed rpm : 500 Pressure hPa rack travel mm : 10.40 Tolerance mm : **←** 0.20

MEASUREMENT

Rated speed rpm : 500

350 Pressure hPa : rack travel mm : 11.15 Tolerance mm : +- 0.15

Pressure hPa 750 rack travel mm : 12.15 Tolerance mm :  $\leftarrow$  0.05

Start interlock

Rated speed rpm : < 190 Rated speed rpm : > 150

Check

speed 1/min : < 210 Check speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 hPa Rated speed rpm : 1000 Del. quantity

cm3/1000 strokes : 295.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 8.0

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 190.0 Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 265.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

: +- 24.0 cm3/1000s.

LOW IDLE

Rated speed rpm	:		250
Rack travel in mm Tolerance mm Del. quantity	:	+-	7. <i>6</i> 0 0.10
cm3/1000 strokes Tolerance	:		40.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.07.98 Edition Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -1

Governer no. : D 421 814 158

Cust. part No. : 1369528

Customer—spec. information Customer : SCANIA : DSC 912 Motor

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity
min. L/h : 110
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Frestroke nm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

Start of delivery blocking

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

		1	
Rack travel in min Tolerance mm	: 12.70 : +- 0.05	Rated speed rpm guide sleeve travel mm	: 470
Del. quantity cm3/1000 strokes	: 292.0	+ Tolerance mm	: 4.09 : + 0.25
		+ Rated speed rpm	: 1470
Tolerance cm3/1000 strokes	: + 1.0	+ guide sleeve + travel mm + Tolerance mm	: 11.50
Check tolerance cm3/1000s.	: <del>+</del> 9.0		: +- 0.50
Spreed		+	RY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 8.0	Rated speed rpm Aneroid pressure hiPa	: 600 : 1500
Check tolerance	10.0	Del. quantity cm3/1000 strokes	: 292.0
cm3/1000s.	: 12.0	Tolerance cm3/1000 strokes	: + 1.0
		theck tolerance cm3/1000s.	: +- 9.0
Rated speed rpm	: 250	+ Spreed	, 1- 9.0
Marca speca (pin	. 230	Tolerance	
Rack travel in mm	: 7.60	+ cm3/1000 strokes	: 8.0
Tolerance mm	: <b>←</b> 0.10	+ Check tolerance	
Del. quantity		+ cm3/1000s.	: 12.0
cm3/1000 strokes	: 40.0	+	
Tolerance cm3/1000 strokes	: <b>←</b> 3.0	<b>†</b>	
Check tolerance	: - 3.0	CONTROL LEVER	
	: <b>←</b> 6.0	I CONTROL LEVER	
Spreed		+ control lever	
Tolerance		+ position degree	: 57.0
	: 5.0	+ tolerance degree	
Check tolerance		+	
cm3/1000s.	: 8.0	+ control lever	
		+ position degree	: 120.0
(D) CETTING OF THE	ECTION DAINE	† tolerance degree	: + 4.0
(B) SETTING OF INJUNION WITH GOVERNOR	ECITON PUMP	T RATED SPEED	
MILL GOAEKAOK		+ rack travel mm	: 11.70
		+ Rated speed rpm	
GUIDE SLEEVE TRAVE	L	+ Tolerance 1/min	
		Check	
Rated speed rpm guide sleeve	: 1057	+ speed 1/min	: + 10
travel mm	: 7.89	+ rack travel mm	: 4.00
Tolerance mm	: <b>←</b> 0.15	+ Rated speed rpm	
	252	+ Tolerance 1/min	: +- 15
	: 250	+ Check	
guide sleeve travel mm	: 1.33	speed 1/min	: +- 20
	· + 0.20	T rack travel mm	: 0.50
. Otti mile intil		+ Tolerance mm	: +- 0.50
Rated speed rpm guide sleeve	: 748	Rated speed rpm	
travel mm	: 6.17	+	
Tolerance mm	: +- 0.25	+	

LOW IDLE	
control lever position degree tolerance degree	: 89.0 : +- 4.0
control lever position degree tolerance degree	: 25.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 9.70
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 7.60 : +- 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.70 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.70 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.70 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.80 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm	: 250 : 11.30

Tolerance mm	: <b>←</b> 0.15
Pressure hPa	: 620
rack travel mm	: 12.30
Tolerance mm	: <b>←</b> 0.05
Start interlock	
Rated speed rpm	: > 150
Rated speed rpm Rated speed rpm	: < 190
Check	
speed 1/min	: > 130
Check	
speed 1/min	: < 210
FUEL DELIVERY CHA	RACTERISTICS
TOTE OFFIARITY ONLY	1410 (FI/TO LTO)
Aneroid pressure	. 1500
hFa Rated speed rpm	: 1500 : 1000
Del. quantity	. 1000
cm3/1000 strokes	: 288.0
Tolerance	
cm3/1000 strokes	: <del>-</del> 4.0
Check tolerance cm3/1000s.	: +- 9.0
<i>Umbi</i> 10005.	,
Aneroid pressure	
hPa Rated speed rpm	: 500
Del. quantity	. 500
cm3/1000 strokes	: 210.0
Tolerance	
cm3/1000 strokes	: <del>-</del> 1.0
Check tolerance cm3/1000s.	: +- 6.0
CIII37 10003.	0.0
OTABITANO FUEL DEL	TUENY
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm	: 20.50
Tolerance mm	: + 0.50
Del. quantity cm3/1000 strokes	: 260.0
Tolerance	: 260.0
cm3/1000 strokes	: +- 20.0
Check tolerance	
cm3/1000s.	: <del></del>
LOW IDLE	

L23

Rated speed rpm	:		250
Rack travel in mm Tolerance mm Del. quantity	:	+	7.60 0.10
cm3/1000 strokes Tolerance	:		40.0
cm3/1000 strokes Check tolerance	:	+	3.0
cm3/1000s.	:	+	6.0
Tolerance cm3/1000 strokes Check tolerance	:		5.0
cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.07.98 Test oil : ISO 4113

Combination No. : 0 402 946 017

Injection pump

Pump designation : PES6P120A720RS8039

EP type number : 0 412 926 026

Governor

Governer design. : RQV250...950PA1243

Governer no. : 0 421 814 162

Cust. part No. : 1374808

Customer-spec. information

Customer : SCANIA

Motor

: DSC 11.79

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 115 Tolerance L/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.15 Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50

Tolerance : **←** 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

	1
Rack travel in mm : 11.90 Tolerance mm : + 0.05	Rated speed rpm : 470 guide sleeve travel mm : 4.09
Del. quantity cm3/1000 strokes : 298.0	+ Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1260 guide sleeve travel mm : 11.50
Check tolerance cm3/1000s. : + 9.0	Tolerance mm : + 0.50
Spreed	+ GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1 Rated speed rpm : 1165
Check tolerance cm3/1000s. : 14.0	Rack travel in mm: 10.90 Tolerance mm: + 1.30
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 5.60 Tolerance mm: + 0.10	Rated speed rpm : 700 Aneroid pressure
Del. quantity cm3/1000 strokes : 21.0	+ hPa : 1500 + Del. quantity
Tolerance cm3/1000 strokes : + 3.0 Check tolerance	+ cm3/1000 strokes : 298.0 + Tolerance + cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0 Spreed	+ Check tolerance - cm3/1000s. : + 9.0
Tolerance cm3/1000 strokes : 5.0 Check tolerance	+ Spreed + Tolerance + cm3/1000 strokes : 8.0
cm3/100gs. : 8.0	Check tolerance cm3/1000s. : 14.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Ī
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 55.0
Rated speed rpm : 1008 guide sleeve	tolerance degree : +- 4.0
travel mm : 8.61 Tolerance mm : + 0.15	control lever position degree : 119.0 tolerance degree : + 4.0
Rated speed rpm : 250 guide sleeve travel mm : 1.33	+ RATED SPEED + rack travel mm : 10.90
Tolerance mm : + 0.20	Rated speed rpm : 995 Tolerance 1/min : + 5
Rated speed rpm : 732 guide steeve travel mm : 6.35	Check speed 1/min : + 10
Tolerance mm : +- 0.25	rack travel mm : 4.00

Rated speed rpm : 1115 Tolerance 1/min : +-15 Check speed 1/min : +--20 Rated speed rpm : 1200 LOW IDLE control lever position degree : 81.0 tolerance degree : +- 4.0 control lever position degree : 17.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 150 CRI mm min. :> 7.90Testing: Rated speed rpm : rack travel mm : 250 5.60 Tolerance mm : **←** 0.10 Rated speed rpm : 300 TORQUE CONTROL Rated speed rpm : 700 11.90 rack travel mm : Tolerance mm : +- 0.05 Rated speed rpm : 950 rack travel mm : 11.90 Tolerance mm : +- 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1500

11.90

Pressure hPa rack travel mm :
Tolerance ---9.20 Tolerance mm :  $\leftarrow$  0.20 MEASUREMENT Rated speed rpm : 500 Pressure hPa : 350 : 10.30 rack travel mm Tolerance mm : + 0.15ressure hPa : 600 rack travel mm : 11.40 Tolerance mm Tolerance mm : + 0.05 Start interlock Rated speed rpm :> 100 Rated speed rpm : < 170 Check speed 1/min :> 80 Check speed 1/min : < 190 FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1500 hPa Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : + 9.0 Aneroid pressure hPa Rated speed rpm : 500

Aneroid pressure
hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 197.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +-0.50

rack travel mm :

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 225.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm: 5.60

: **←** 0.10 Tolerance mm Del quantity

cm3/1000 strokes : 21.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +-6.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 8.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 17.07.98 Edition : 17.07.98
Test oil : ISO 4113

Combination No. : 0 402 946 018

Injection pump

Pump designation : PES6P120A720RS8041 EP type number : 0 412 926 027

Governor

Governer design. : RQV250...950PA1253 Governer no. : 0 421 814 166

Cust. part No. : 1383215

Customer-spec. information Customer : SCANIA : DSC 11.75 Motor

# TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

: 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.40 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50Tolerance mm :  $\leftarrow 0.50$ 

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

!	
Rack travel in mm: 11.20 Tolerance mm: + 0.05	- Rated speed rpm : 420 - guide sleeve - travel mm : 3.37
Del. quantity cm3/1000 strokes : 261.0	Tolerance mm : +- 0.25
Tolerance	- Rated speed rpm : 1390 - guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 11.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : + 8.0	- GUIDE SLEEVE POSITION
Spreed	99795 955545 199717914
Tolerance cm3/1000 strokes : 8.0	- control lever - position degree : - 1 - Rated speed rpm : 1235
Check tolerance cm3/1000S. : 14.0	Rack travel in mm : 10.20 Tolerance mm : +- 1.30
Rated speed rpm : 250	- FULL LOAD DELIVERY AT FULL LOAD STOP
+	•
Rack travel in mm: 5.60	Rated speed rpm : 700
Tolerance mm : +- 0.10 +	Aneroid pressure
Del. quantity + cm3/1000 strokes : 16.0 +	- hPa : 1500
	Del. quantity
Tolerance + 3.0 +	- cm3/1000 strokes : 261.0
	- Tolerance - cm3/1000 strokes : +- 1.0
Check tolerance + 6.0 + 6.0	- cm3/1000 strokes : +- 1.0 - Check tolerance
Spreed + Tolerance +	
cm3/1000 strokes : 5.0	- Spreed - Tolerance
Check tolerance	- cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	- Check tolerance
11137 10005 8.0	- cm3/1000s. : 14.0
Ţ	- 1107 (0003 14.0
(B) SETTING OF INJECTION PUMP	•
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL +	control lever
Dated and an address	position degree : 59.0
Rated speed rpm : 1006	tolerance degree : +- 4.0
guide sleeve + travel mm : 7.25 +	- control lever
Tolerance mm : +- 0.15	- position degree : 112.0 - tolerance degree : +- 4.0
Rated speed rpm : 250	toterance degree : += 4.0
Rated speed rpm : 250 + guide sleeve +	RATED SPEED
travel mm : 1.31	rack travel mm : 10.20
Tolerance mm : + 0.20	Rated speed rpm : 995
1000141100 111111	Tolerance 1/min : +- 5
Rated speed rpm : 673	- Check
guide sleeve	speed 1/min : +- 10
travel mm : 4.96	· ·
Tolerance mm : + 0.25	rack travel mm : 4.00
100000000000000000000000000000000000000	THE STATE OF THE S

Rated speed rpm Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: 1130 : ← 15 : ← 20 : 0.50 : ← 0.50 : 1250
LOW IDLE	
control lever position degree tolerance degree	: 66.0 : + 4.0
control lever position degree tolerance degree	: 12.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 5.60 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 11.20 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 11.20 : ← 0.05
Rated speed rpm	: 500

Pressure hPa rack travel mm Tolerance mm	: - : 8.20 : + 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 290 : 9.00 : ← 0.15	
Pressure hPa rack travel mm Tolerance mm	: 540 : 10.40 : + 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 170	
Check speed 1/min Check	: > 80	
speed 1/min	: < 190	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm	: 1500	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 950	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 950	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1500 : 950 : 245.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1500 : 950 : 245.0 : +- 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity	: 1500 : 950 : 245.0 : + 4.0 : + 7.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1500 : 950 : 245.0 : + 4.0 : + 7.0 : 500 : 153.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 950 : 245.0 : + 4.0 : + 7.0	

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 24.0

# LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed : +- 6.0

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.07.98 : ISO 4113

Combination No. : 0 402 945 020

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -2

Governer no.

: 0 421 814 168

Cust. part No. : 1369545

Customer—spec. information Customer : SCANIA

Motor

: DSC 9.11

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 105 Tolerance l/h : +- 15.0

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

: 251.5

Tolerance bar : + 1.5

M<sub>0</sub>5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00

: +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50

Tolerance mm : ← 0.50

Firing order : 1-5-3-6-2-

: 4

Fhasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no.

: 1

BASIC SETTING

	<b>_</b>		
Rack travel in mm : 12. Tolerance mm : + 0.		Rated speed rpm guide sleeve	: 470
Del. quantity cm3/1000 strokes : 277	7.0	travel mm Tolerance mm	: 4.09 : +- 0.25
	<del>}</del>	Rated speed rpm	: 1470
Tolerance cm3/1000 strokes : +- 1	1.0	guide sleeve travel mm Tolerance mm	: 11.50 : +- 0.50
Check tolerance cm3/1000S. : +- 9	7.0		
Spreed			Y AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 8	3.0	Rated speed rpm Aneroid pressure hPa	: 600 : 1500
		Del. quantity	
Check tolerance cm3/1000s. : 12	2.0	cm3/1000 strokes Tolerance	
-	+	cm3/1000 strokes	: +- 1.0
	†	Check tolerance cm3/1000s.	: +- 9.0
Rated speed rpm : 250	ı I	Spreed	; <del>- 7.</del> 0
marca opeca i piii	·	Tolerance	
	.70		: 8.0
	10 +	Check tolerance	
Del. quantity		cm3/1000s.	: 12.0
cm3/1000 strokes : 45 Tolerance	÷.0		
	3.0		
Check tolerance	Ţ	CONTROL LEVER	
	3.0	CONTINUE ELVEN	
Spreed	+	control lever	
Tolerance	+	position degree	
	5.0	tolerance degree	: +- 4.0
Check tolerance	3.0	andral lavan	
cm3/1000s. : 8	···	control lever position degree	: 119.0
	I	tolerance degree	
(B) SETTING OF INJECTION F	AMP	totorarioc acgree	, , 4,0
WITH GOVERNOR	+	RATED SPEED	
	+	rack travel mm	: 11.30
CLITAE SLEEVE TRAVEL	+	Rated speed rpm	: 1045 : +- 5
GUIDE SLEEVE TRAVEL	Ī	Tolerance 1/min Check	: )
Rated speed rpm : 1057 guide sleeve	,	speed 1/min	: +- 10
	89 🗼	rack travel mm	: 4.00
Tolerance mm : +- 0.	15	Rated speed rpm	: 1225
	·	Tolerance 1/min	: +- 15
Rated speed rpm : 250	<b>,</b>	Check	
guide sleeve travel mm : 1.	33	speed 1/min	: +- 20
Tolerance mm : +- 0.		rack travel mm	: 0.50
		Tolerance mm	: +- 0.50
Rated speed rpm : 748 guide sleeve	+	Rated speed rpm	: 1350
	17		
Tolerance mm : +- 0.	25 +		

## LOW IDLE

control lever

position degree : 89.0 tolerance degree : + 4.0

control lever

position degree : 24.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.80

Testing:

Rated speed rpm : 250 rack travel mm : 7.70 Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600 rack travel mm : 12.30 Tolerance mm : + 0.05

Rated speed rpm : 1000 rack travel mm : 12.30 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 10.80
Tolerance mm : +- 0.20

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 330 rack travel mm : 11.20

Tolerance mm : +- 0.15

Pressure hPa : 600 rack travel mm : 11.90 Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : < 190 Rated speed rpm : > 150

Check

speed 1/min : < 210 Check speed 1/min : > 130

\_\_\_\_\_\_

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 1600

Del. quantity cm3/1000 strokes : 278.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. :  $\leftarrow$  9.0

Aneroid pressure

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm	:		250
Rack travel in mm Tolerance mm Del. quantity	:	+	7.70 0.10
cm3/1000 strokes	:		45.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.07.98 : ISO 4113

Compination No. : 0 402 946 021

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQ250/1000PA1265 Governer no. : 0 421 801 800

Cust. part No. : 1380278

Customer-spec. information Customer : SCANIA : DSC 9.12 Motor

# TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure bar : 251.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.20

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

	1		
Rack travel in mm : 12.70 Tolerance mm : +- 0.00		Rated speed rpm guide sleeve travel mm	: 364
Del. quantity cm3/1000 strokes : 292.		Tolerance mm	: 3.50 : + 0.10
Tolerance cm3/1000 strokes : + 1.0	<del></del> †	Rated speed rpm guide sleeve travel mm	: 490 : 4.50
Check tolerance	·	Tolerance mm	: + 0.10
cm3/1000s. : +- 9.1	)	Rated speed rpm guide sleeve	: 1146
Spreed	+	travel mm Tolerance mm	: 5.50 : ← 0.10
Tolerance cm3/1000 strokes : 8.0	†	Rated speed rpm guide sleeve	: 1610
Check tolerance cm3/1000s. : 12.0		travel mm Tolerance mm	: 11.50 : + 0.50
Rated speed rpm : 250	‡	GUIDE SLEEVE POSIT	ION
Rack travel in mm : 7.60 Tolerance mm : +- 0.10 Del. quantity	+	control lever position degree Rated speed rpm	: 109 : 600
<pre>cm3/1000 strokes : 40.0 Tolerance cm3/1000 strokes : +- 3.0</pre>	+	Rack travel in mm Tolerance mm	: 16.40 : +- 0.80
Check tolerance cm3/1000s. : +- 6.0 Spread	†	EUL LOAD DELTWED	AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 5.0	)		: 600
Check tolerance cm3/1000S. : 8.0	<del>,</del>	Aneroid pressure hPa	: 1500
(B) SETTING OF INJECTION PUR	#P +	Del. quantity cm3/1000 strokes Tolerance	: 292.0
WITH GOVERNOR	+	cm3/1000 strokes Check tolerance	
GUIDE SLEEVE TRAVEL	<u> </u>	cm3/1000S. Spreed Tolerance	: +- 9.0
Rated speed rpm : 1073 guide sleeve	<u> </u>	cm3/1000 strokes Check tolerance	: 8.0
travel mm : 4.8% Tolerance mm : + 0.1	}	cm3/1000s.	: 12.0
Rated speed rpm : 250 guide sleeve	‡	CONTROL LEVER	
travel mm : 1.33 Tolerance mm : + 0.20		control lever	
Rated speed rpm : 990 guide sleeve	†	position degree tolerance degree	
travel mm : 4.50 Tolerance mm : +- 0.10	}	control lever position degree	: 107.0

tolerance degree : +- 4.0	†
RATED SPEED rack travel mm : 11.70 Rated speed rpm : 1045 Tolerance 1/min : +- 5 Check speed 1/min : +- 10	ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 500
rack travel mm : 4.00 Rated speed rpm : 1235 Tolerance 1/min : + 15 Check	Pressure hPa : 1500 rack travel mm : 12.70 Tolerance mm : +- 0.05
speed 1/min : +- 20  rack travel mm : 0.50  Tolerance mm : +- 0.50  Rated speed rpm : 1350	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.80 Tolerance mm : + 0.20 MEASUREMENT
	Rated speed rpm : 500
LOW IDLE	Pressure hPa : 250 rack travel nm : 11.30 Tolerance mm : + 0.15
control lever position degree : 87.0 tolerance degree : + 4.0 control lever	Pressure hPa : 620 rack travel mm : 12.30 Tolerance mm : 12.35
position degree : 25.0 tolerance degree : +- 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : > 150 Rated speed rpm : < 190
Rated speed rpm : 150	Check
CRT mm min. :> 9.50 Testing:	speed 1/min : > 130 Check speed 1/min : < 210
Rated speed rpm : 250 rack travel mm : 7.60 Tolerance mm : + 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 355 rack travel mm : 2.00	Aneroid pressure hPa : 1500 Rated speed rpm : 1000 Del. quantity
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : + 0.05	cm3/1000 strokes : 288.0 Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 9.0
Rated speed rpm : 1000 rack travel mm : 12.70 Tolerance mm : + 0.10	Aneroid pressure hPa : - Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 6.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel min : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes : + 20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  24.0

# LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/100Gs. :  $\leftarrow$  6.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.07.98 Test oil : ISO 4113

Combination No. : 0 402 946 022

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQ250/1000PA1265-1

Governer no. : 0 421 801 801

Cust. part No. : 1380280

Customer-spec. information

Customer : SCANIA : DSC 9.11 Motor

## TEST BENCH REQUIREMENTS

Inlet line : EHAS

Test oil inlet

temp. °C

Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : 1 → 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 20.50

Tolerance mm : +- 0.20

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

## Start of delivery blocking

Tolerance : + 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

BASIC SETTING

	1
Rack travel in mm : 12.30 Tolerance mm : + 0.05	Rated speed rpm : 364 guide sleeve
Del. quantity cm3/1000 strokes : 277.0	travel mm : 3.50 Tolerance mm : + 0.10
Tolerance	Rated speed rpm : 490 guide sleeve
cm3/1000 strokes : + 1.0	+ travel mm : 4.50 + Tolerance mm : + 0.10
Check tolerance cm3/1000s. : +- 8.0	Rated speed rpm : 1146 guide sleeve
Spreed	travel mm : 5.50 Tolerance mm : + 0.10
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 1610
Check tolerance cm3/1000s. : 12.0	travel mm : 11.50 Tolerance mm : + 0.50
Rated speed rpm : 250	+ GUIDE SLEEVE POSITION
Rack travel in mm : 7.70	- control lever
Tolerance mm : + 0.10	position degree : 109
Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : 45.0	T Rated speed (piii : 000
	T Book through the same and 40 40
Tolerance	+ Rack travel in mm : 16.40
cm3/1000 strokes : + 3.0	† Tolerance mm : + 0.80
Check tolerance	†
cm3/1000s. : +- 6.0	
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : 5.0	+ Rated speed rpm : 600
Check tolerance	+ Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500
	+ Del. quantity
	+ cm3/1000 strokes : 277.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
	+ cm3/1000s. : $+$ 8.0
GUIDE SLEEVE TRAVEL	+ Spreed
	† Tolerance
Rated speed rpm : 1073	+ cm3/1000 strokes : 8.0
guide sleeve	+ Check tolerance
travel mm : 4.82	+ cm3/1000s. : 12.0
Tolerance mm : + 0.15	+
Data danced non a 200	†
Rated speed rpm : 250	CONTROL LEVED
guide sleeve	+ CONTROL LEVER
travel mm : 1.33	† annihal la
Tolerance mm : + 0.20	+ control lever
	+ position degree : 38.0
Rated speed rpm : 990	+ tolerance degree : +- 4.0
guide sleeve	†
travel mm : 4.50	+ control lever
	<b>.</b>
Tolerance mm : + 0.10	position degree : 106.0

tolerance degree : +	- 4.0 +		
Rated speed rpm : Tolerance 1/min : + Check	11.30 1045 - 5 - 10	ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm :	500
Rated speed rpm : Tolerance 1/min : + Check	4.00 1225 - 15	Pressure hPa : rack travel mm : Tolerance mm :	1500 12.30 +- 0.05
speed 1/min : + rack travel mm : Tolerance mm : +		Rated speed rpm : Pressure hPa : rack travel mm : Tolerance mm :	500 - 10.80 +- 0.20
Rated speed rpm :	1350	MEASUREMENT	0.20
LOW IDLE		Rated speed rpm : Pressure hPa :	500 330
	+	rack travel mm :	11.20 + 0.15
<pre>control lever position degree : tolerance degree : + control lever</pre>	87.0	rack travel mm :	600 11.90 +- 0.05
position degree : tolerance degree : +		Start interlock	
Setting point w/cut b	+	Rated speed rpm : Rated speed rpm :	< 190 > 150
Rated speed rpm :  CRT mm min. :>	9.50	Check speed 1/min :	< 210
Testing:	† †	Check	> 130
	250 7.70 - 0.10	FUEL DELIVERY CHARA	CTERISTICS
rack travel mm : Rated speed rpm : Tolerance 1/min : +		Aneroid pressure hPa : Rated speed rpm : Del. quantity cm3/1000 strokes :	1500 1000 278 0
rack travel mm :	600 + 12.30 + - 0.05	Tolerance cm3/1000 strokes : Check tolerance	
Rated speed rpm : rack travel mm : Tolerance mm : +	12.30	Aneroid pressure hPa : Rated speed rpm :	 500

Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : +-1.0

Check tolerance

6.0 cm3/1000s.

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes : - 20.0

Check tolerance

cm3/1000s. : + 24.0

## LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.70 Tolerance mm : + 0.10Del. quantity

45.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed Tolerance

5.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.98 Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQ250/1000PA1265-2 Governer no. : 0 421 801 808

Cust. part No. : 1385102

Customer—spec. information Customer : SCANIA Motor : DSC 9.15

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.20

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

	+
Rack travel in mm : 12.90	+ Rated speed rpm : 360
Tolerance mm : +- 0.05	+ guide sleeve
	+ travel mm : 3.50
Del. quantity	+ Tolerance mm : + 0.10
cm3/1000 strokes : 300.0	† Pated and an 100
Talanana	+ Rated speed rpm : 490
Tolerance cm3/1000 strokes : +- 1.0	+ guide sleeve + travel mm : 4.50
Clib/ 1000 Strokes : - 1.0	Tolerance mm : + 0.10
Check tolerance	Total de light
cm3/1000s. : +- 9.0	+ Rated speed rpm : 1134
	+ guide sleeve
Spreed	travel mm : 5.50
	† Tolerance mm : + 0.10
Tolerance	1400
cm3/1000 strokes : 8.0	Rated speed rpm : 1600
Check tolerance	+ guide steeve + travel mm : 11.50
cm3/1000s. : 12.0	Tolerance mm : +- 0.50
. 12.0	Tocerance man . 1 0.30
	+
	+ GUIDE SLEEVE POSITION
Rated speed rpm : 250	+
Dools toward in on 1 7.00	†
Rack travel in mm : 7.60  Tolerance mm : + 0.10	+ control lever + position degree : 109
Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : 40.0	Harca speca i piii . ooo
Tolerance	Rack travel in mm: 16.40
cm3/1000 strokes : +- 3.0	+ Tolerance mm : + 0.80
Chipy (Coo Strokes . 4 S.O	T roterance min 0.00
Check tolerance	Totel arice min
Check tolerance cm3/1000s. : +- 6.0	<u> </u>
Check tolerance cm3/1000s. : +- 6.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000S. : +- 6.0 Spreed Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1060	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1060	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve travel mm : 1.44	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve travel mm : 1.44 Tolerance mm : +- 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER  control lever position degree : 47.0
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL.  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve travel mm : 1.44 Tolerance mm : +- 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0  CONTROL LEVER  control lever position degree : 47.0
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve travel mm : 1.44 Tolerance mm : +- 0.20  Rated speed rpm : 970 guide sleeve travel mm : 4.50	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER  control lever position degree : 47.0 tolerance degree : + 4.0  control lever
Check tolerance cm3/1000s. : +- 6.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1060 guide sleeve travel mm : 4.82 Tolerance mm : +- 0.15  Rated speed rpm : 250 guide sleeve travel mm : 1.44 Tolerance mm : +- 0.20  Rated speed rpm : 970 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 600 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 300.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 9.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0  CONTROL LEVER  control lever position degree : 47.0 tolerance degree : + 4.0

tolerance degree : +- 4.0 +	-
RATED SPEED rack travel mm : 11.90 Rated speed rpm : 1045 Tolerance 1/min : + 5 Check	ANEROID/ALTITUDE COMPENSATOR TEST SETTING
speed 1/min : + 10  rack travel mm : 4.00  Rated speed rpm : 1240	- Rated speed rpm : 500 - Pressure hPa : 1500 - rack travel mm : 12.90
Tolerance 1/min : + 15 Check speed 1/min : + 20	Tolerance mm : +- 0.05 Rated speed rpm : 500
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350	- Pressure hPa : rack travel mm : 9.80 - Tolerance mm : + G.20
Traces opeca for . 1990	- MEASUREMENT
	- Rated speed rpm : 500 -
LOW IDLE	- Pressure hPa : 325 - rack travel mm : 10.55 - Tolerance mm : +- 0.15
control lever position degree : 87.0 tolerance degree : + 4.0  control lever	Pressure hPa : 760 - rack travel mm : 12.15 - Tolerance mm : +- 0.05
position degree : 25.0 tolerance degree : + 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : < 190 Rated speed rpm : > 150
Rated speed rpm : 150	· Check
CRT mm min. : > 9.50	- speed 1/min : < 210 - Check
Testing:	- speed 1/min : > 130 -
Rated speed rpm : 250 + rack travel mm : 7.60 + Tolerance mm : + 0.10 + rack travel mm : + 0.10	FUEL DELIVERY CHARACTERISTICS
rack travel mm : 2.00  Rated speed rpm : 355  Tolerance 1/min : +- 20	Aneroid pressure  hPa : 1500  Rated speed rpm : 1000  Del. quantity  cm3/1000 strokes : 295.0
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 12.90 Tolerance mm : +- 0.05	- cm3/1000 strokes : 295.0 - Tolerance : 4.0 - cm3/1000 strokes : 4.0 - Check tolerance : 4.0 - cm3/1000s. : 4.0
Rated speed rpm : 1000 rack travel mm : 12.90 rolerance mm : +- 0.10	Aneroid pressure hPa : - Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 172.0 Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 6.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm Del. quantity

cm3/1000 strokes : 265.0

Tolerance

cm3/1000 strokes : -- 20.0

Check tolerance

: +- 24.0 cm3/1000s.

#### LOW IDLE

Rated speed rpm : 250

7.60 Rack travel in mm : Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.07.98 : ISO 4113

Combination No. : 0 402 946 025

Injection pump

Pump designation : PES6P120A320RS8038

EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -3

Governer no. : 0 421 814 178

Cust. part No. : 1383494

Customer-spec. information

Customer : SCANIA

Motor

: DSC 915

### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 20.0

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

: 251.5

Tolerance bar : + 1.5

M21

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00

: +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 20.50

Tolerance mm : ← 0.20

: 1-5- 3- 6- 2-: 4 Firing order

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance "NW : + 0.75

Start of delivery blocking

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm : 600

	1
Rack travel in mm : 12.90 Tolerance mm : + 0.05	Rated speed rpm : 470 guide sleeve travel mm : 4.09
	t 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Del. quantity cm3/1000 strokes : 300.0	Tolerance mm : + 0.25
· ·	+ Rated speed rpm : 1470
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 11.50
	+ Tolerance mm : + 0.50
Check tolerance	+
cm3/1000s. : +- 8.0	
	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	
opi cca	Rated speed rpm : 600
Tolerance	Aneroid pressure
cm3/1000 strokes : 8.0	hPa : 1500
CMS/ 1000 Strokes : 6.0	
	Del. quantity
Check tolerance	cm3/1000 strokes : 300.0
cm3/1000s. : 12.0	+ Tolerance
	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
	+ cm3/1000s. : + 8.0
Rated speed rpm : 250	Spreed
	+ Tolerance
Rack travel in mm: 7.60	+ cm3/1000 strokes : 8.0
Tolerance mm : +- 0.10	Check tolerance
Del. quantity	7.44000-
out 4000 shades a // /	+ cm3/1000s. : 12.0
cm3/1000 strokes : 40.0	†
Tolerance	†
cm3/1000 strokes : + 3.0	
Check tolerance	CONTROL LEVER
$cm3/1000s.$ : $\leftarrow$ 6.0	+
Spreed	+ control lever
Tolerance	+ position degree : 57.0
cm3/1000 strokes : 5.0	+ tolerance degree : +- 4.0
Check tolerance	+
cm3/1000s. : 8.0	∔ control lever
	position degree : 120.0
	tolerance degree : + 4.0
(B) SETTING OF INJECTION PUMP	1000141100 403100
WITH GOVERNOR	ARATED SPEED
MPIN OAR PINAN	rack travel mm : 11.90
	Rated speed rpm : 1045
GUIDE SLEEVE TRAVEL	Tolerance 1/min : + 5
POTAE STEENE INVALL	
Dated speed spr : 4059	+ Check
Rated speed rpm : 1058	+ speed 1/min : +- 10
guide sleeve	<b>†</b>
travel mm : 7.89	† rack travel mm : 4.00
Tolerance mm : +- 0.15	+ Rated speed rpm : 1235
	+ Tolerance 1/min : +- 15
Rated speed rpm : 250	+ Check
guide sleeve	+ speed 1/min : +- 20
travel mm : 1.33	+
Tolerance mm : +- 0.20	rack travel mm : 0.50
TO COLUMN TO THE	+ Tolerance mm : +- 0.50
Rated speed rpm : 748	Rated speed rpm : 1350
guide steeve	Thateu speed (pin . 1000
travel mm : 6.17	I
	T
Tolerance mm : +- 0.25	T

LOW IDLE	
control lever position degree tolerance degree	: 89.0 : +- 4.0
control lever position degree tolerance degree	: 25.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT num min.	: > 9.80
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 7.60 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.90 : + 0.05
Rated speed rom rack travel mm Tolerance mm	: 1000 : 12.90 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.90 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.80 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm	: 325 : 10.55

Tolerance mm	: + 0.15		
Pressure hPa rack travel mm Tolerance mm	: 760 : 12.15 : ← 0.05		
Start interlock			
Rated speed rpm Rated speed rpm	: < 190 : > 170		
Check speed 1/min Check	: < 210		
speed 1/min	: > 150		
FUEL DELIVERY CHA	RACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1500 : 1600		
cm3/1000 strokes	: 295.0		
cm3/1000 strokes Check tolerance	: +- 4.0		
cm3/1000s.	: +- 8.0		
Aneroid pressure	: -		
Rated speed rpm Del. quantity	: 500		
cm3/1000 strokes Tolerance	: 172.0		
cm3/1000 strokes Check tolerance			
cm3/1000s.	: +- 6.0		
STARTING FUEL DELIVERY			
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.50 : ← 0.50		
Del. quantity cm3/1000 strokes	: 265.0		
Tolerance cm3/1000 strokes	: +- 20.0		
Check tolerance cm3/1000s.	: +- 24.0		

LOW IDLE

Rated speed rpm	:		250
Rack travel in mm Tolerance mm	:	<b>←</b>	7.60 0.10
Del. quantity cm3/1000 strokes Tolerance	:		40.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s.	:	+-	6.0
Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		8.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.07.98 : ISO 4113 Edition Test oil

Combination No. : 0 402 946 026

Injection pump

Pump designation : PES6P120A720RS8045 EP type number : 0 412 926 028

Governor

Governer design. : RQV350...1100PA1305K

Governer no. : 0 421 815 967

Cust. part No. : 1388631

Customer-spec. information Customer : SCANIA Hotor. : DSI1174M

### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 80 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

	+
Rack travel in mm : 11.75 Tolerance mm : +- 0.05	Rated speed rpm : 460 guide sleeve
Dol guantity	+ travel mm : 4.07 + Tolerance mm : + 0.25
Del. quantity cm3/1000 strokes : 250.0	+
Tolerance	+ Rated speed rpm : 1400 + guide sleeve
$cm3/1000$ strokes : $\leftarrow$ 1.0	travel mm : 13.50
Charles a real	+ Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 7.0	
Carand	+ GUIDE SLEEVE POSITION
Spreed	Ĭ
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1 Rated speed rpm : 1250
Check tolerance	+
cm3/1000s. : 12.0	Rack travel in mm : 10.70 Tolerance mm : + 2.00
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.10	+ Rated speed rpm : 1100
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 30.0	+ Del. quantity
Tolerance cm3/1000 strokes : + 3.0	+ cm3/1000 strokes : 250.0
Check tolerance	+ Tolerance + cm3/1000 strokes : + 1.0
cm3/1000s. : +- 6.0	+ Check tolerance
Spreed	+ cm3/1000s. : + 7.0
Tolerance	+ Spreed
cm3/1000 strokes : 5.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000s. : 12.0
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	COLUMN A FILED
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	t control lever
GOIDE SLEEVE TRAVEL	+ position degree : 64.0
Rated speed rpm : 1165	tolerance degree : +- 4.0
guide sleeve	+
travel mm : 10.15	+ control lever
Tolerance mm : + 0.15	+ position degree : 118.0
	tolerance degree : + 4.0
Rated speed rpm : 350	+
guide steeve	RATED SPEED
travel mm : 2.00 Tolerance mm : + 0.20	+ rack travel mm : 10.70
Tolerance mm : + 0.20	+ Rated speed rpm : 1145 + Tolerance 1/min : + 5
Rated speed rpm : 755	+ Tolerance 1/min : + 5 + Check
guide sleeve	+ speed 1/min : + 10
travel mm : 6.14	- Special Printing
Tolerance mm : +- 0.25	rack travel mm : 4.00

Rated speed rpm Tolerance 1/min Check	: 1235 : +- 15
speed 1/min rack travel mm Tolerance mm Rated speed rpm	: +- 20 : 0.50 : +- 0.50 : 1300
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : +- 4.0
control lever position degree tolerance degree	: 17.0 : + 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.10 : +- 0.10
Rated speed rpm	: 275
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.75 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 10.65 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1500 : 11.75 : +- 0.05
Rated speed rpm	: 1100

Pressure hPa rack travel mm Tolerance mm	: - : 7.10 : + 0.20
MEASUREMENT	
Rated speed rpm	: 1100
Pressure hPa rack travel mm Tolerance mm	: 340 : 8.35 : + 0.25
Pressure hPa rack travel mm Tolerance mm	: 800 : 10.65 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 263.0 : ← 4.0 : ← 6.0 : - : 500 : 163.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
STARTING FUEL DEL	.IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 20.0 : +- 24.0

LOW IDLE

Rated speed rpm	:	350
Rack travel in mm Tolerance mm	: : +-	4.10 0.10
Del. quantity cm3/1000 strokes Tolerance	:	30.0
cm3/1000 strokes	: ←	3.0
cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	5.0
cm3/1000s.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 17.07.98 : 130 4113

Combination No. : 0 402 945 031

Injection pump

Pump designation : PES6P120A320RS8050

EP type number : 0 412 926 032

Governor

Governer design. : RQ250/1000PA1342

Governer no. : 0 421 801 822

Cust. part No. : 1388694

Customer-spec. information Customer : SCANIA Motor : DSI 9E01 Power KW : 170.0

### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 095

Inlet press. bar : inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 80 Tolerance l/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

	1	
Rack travel in mm : 12. Tolerance mm : + 0.		Rated speed rpm : 410 guide sleeve travel mm : 3.50
Del. quantity cm3/1000 strokes : 240	0.0	Toterance mm : + 0.10
Tolerance cm3/1000 strokes : +- 1	1.0	Rated speed rpm : 530 guide sleeve travel mm : 4.50
Check tolerance cm3/1000s. : + 7	·.o	Tolerance mm : + 0.10  Rated speed rpm : 1670
Spreed	<u></u>	guide sleeve travel mm : 11.50 Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : 8	3.0	
Check tolerance cm3/1000S. : 12	2.0	GUIDE SLEEVE POSITION
***************************************		control lever position degree : 108 Rated speed rpm : 600
Rated speed rpm : 285	5	,
Tolerance mm : $\leftarrow$ 0.	20 10	Rack travel in mm : 16.00 Tolerance mm : + 0.60
Del. quantity cm3/1000 strokes : 30 Tolerance	0.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : +- 3	3.0	Rated speed rpm : 700
Check tolerance cm3/1000S. : ← 6 Spreed	5.0	Aneroid pressure hPa : 1500
Tolerance	5.0	Del. quantity cm3/1000 strokes : 240.8 Tolerance
Check tolerance	+	cm3/1000 strokes : +- 1.0
cm3/1000s. : 8	3.0	Check tolerance cm3/1000s. : +- 7.0 Spreed
(B) SETTING OF INJECTION F WITH GOVERNOR	PUMP	Tolerance cm3/1000 strokes : 8.0
		Check tolerance cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	+	
Rated speed rpm : 1061 guide sleeve	1	CONTROL LEVER
travel mm : 4.	72	
Tolerance mm : + 0.	15	control lever position degree : 43.0
Rated speed rpm : 285 guide sleeve	; 	tolerance degree : +- 4.0
travel mm : 2. Tolerance mm : + 0.		control lever position degree : 105.0
Rated speed rpm : 1000	†	tolerance degree : +- 4.0
guide sleeve travel mm : 4.	50 ‡	RATED SPEED rack travel mm : 11.30
Tolerance mm : + 0.		Rated speed rpm : 1058

Tolerance 1/min	: +- 8	1		
Check	. +- 0	I	Rated speed rpm	: 500
speed 1/min	: +- 10	1	Pressure hPa	: 1500
		+	rack travel mm	: 12.30
rack travel mm	: 4.00	+	Tolerance mm	: +- 0.05
Rated speed rpm Tolerance 1/min	: 1245	†	Datad anada was	. 500
Check	: +- 15	Ī	Rated speed rpm Pressure hPa	
speed 1/min	: +- 20	I	rack travel mm	: 10.40
		+	rack travel mm Tolerance mm	: +- 0.20
rack travel mm		+		
Tolerance mm		+	MEASUREMENT	
Rated speed rpm	: 1330	Ī	Rated speed rpm	: 500
		I	Naced speed i pili	. 300
		1	Pressure hPa	: 275
		<del> }</del>	rack travel mm	
LOW IDLE		+	Tolerance mm	: <del>←</del> 0.15
		İ	Pressure hPa	: 425
control lever		I	rack travel mm	
position degree	: 85.0	1	Tolerance mm	
tolerance degree		+	-	
		+	044	
control lever position degree	. 21.0	1	Start interlock	
tolerance degree	: + 4.0	I	Rated speed rpm	: > 100
cotor and dog, co	, , ,,,,	1	Rated speed rpm	: < 170
Setting point w/o	ut bumper spring	+		
	450	+	Check	
Rated speed rpm	: 150	†	speed 1/min Check	: > 80
CRT mm min.	· > 8.00	I	speed 1/min	: < 190
Otto min (ii ti ii	. > 0.00	1	speca minn	
Testing:		+		
Maked an end and	205	+	FUEL DELIVERY CHA	RACTERISTICS
Rated speed rpm rack travel mm	: 280 : 5.20	<u> </u>		
Tolerance mm		I	Aneroid pressure	
		1	hPa	: 1500
rack travel mm		+	Rated speed rpm	
Rated speed rpm		+	Del. quantity	241.0
Tolerance 1/min	: +- 20	†	cm3/1000 strokes Tolerance	: 274.0
		I	cm3/1000 strokes	: +- 4.0
TORQUE CONTROL		+	Check tolerance	· • ••
Rated speed rpm	: 700	+	cm3/1000s.	: <b>←</b> 6.0
rack travel mm	: 12.30	+		
Tolerance mm	: +- 0.05	†	Amanadal accessors	
Rated speed rpm	• 1000	1	Aneroid pressure hPa	
rack travel mm	: 12.30	I	Rated speed rpm	: 500
rack travel mm Tolerance mm	: + 0.10	+	Del. quantity	
		+	cm3/1000 strokes	: 210.0
		<del></del> +	Tolerance	
ANEROID/ALTITUDE		†	cm3/1000 strokes	: +- 1.0
COMPENSATOR TEST		1	Check tolerance cm3/1000s.	: +- 4.0
		I	UID/ 10003.	4.0
SETTING		1		
		•		

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 250.0

Tolerance cm3/1000 strokes : ← 20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  25.0

## LOW IDLE

cm3/1000s.

Rated speed rpm : 285

Rack travel in mm: 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance

End of test specification sheet

8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.07.98 Test oil : 130 4113

Combination No. : 0 400 863 023

Injection pump

Pump designation : PES3A95D410/3RS2905 EP type number : 0 410 893 996

Governor

Governer design. : RSV325...1250A5C861L

Governer no. : 0 420 232 624

Cust. part No. : 0423 1731 KY

Customer-spec. information Customer : KHD-DMI

Motor : F3L912/913\_NEU Power KW : 44.0 Motor

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1- 3- 2

: 0-120-240 Phasing Tolerance Check

Check

tolerance °NV : ← 0.75

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance : +- 3.0 cm3/1000s.

Spreed

Tolerance - cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
	CONTROL LEVER
Rated speed rpm : 325	control lever position degree : 102.0
	tolerance degree : + 4.0
Rack travel in mm: 8.50 - Tolerance mm: + 0.10 -	+ RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance -	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	<del> </del>
Check tolerance - cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 1339
cm3/1000s. : + 4.5 Spreed	Rated speed rpm : 1339 Tolerance 1/min : +- 15
Tolerance -	1.0000000000000000000000000000000000000
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance -	Tolerance mm : - 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1510
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1360
WITH GOVERNOR -	Tolerance 1/min : + 15
•	+
•	Ī
GUIDE SLEEVE POSITION -	
•	LOW IDLE
control lever	
position degree : FREE -	control lever
Rated speed rpm : 800 -	position degree : 69.0
Dool Americal in terms (D. 50)	tolerance degree : +- 4.0
Rack travel in mm: 0.50 - Tolerance mm: + 0.20 -	Setting point w/out bumper spring
governor spring	Rated speed rpm : 325
pre-tension -	rack travel mm : 8.00
click setting $x$ : 3.00	Tolerance mm : + 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 1250	CRT mm min. : > 19.50
Aneroid pressure	Testing:
hPa : -	
Del. quantity	Rated speed rpm : 325
cm3/1000 strokes : 76.0	rack travel mm : 8.50
Tolerance - cm3/1000 strokes : +- 1.0 -	Tolerance mm : +- 0.10
Check tolerance -	rack travel mm : 2.00
cm3/1000s. : +- 3.0	Rated speed rpm : 473
Spreed -	Tolerance 1/min : +- 30
Tolerance -	
cm3/1000 strokes : 3.5	TORQUE CONTROL

Rated speed rpm : 1250 rack travel mm : 11.35
Tolerance mm : + 0.05

Rated speed rpm : 750

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : → 0.75

Del. quantity cm3/1000 strokes : 125.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  7.5

Check tolerance

cm3/1000s. : :- 10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000S. : - 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28.07.98 : ISO 4713

Combination No. : 0 400 876 434

Injection pump

Pump designation : PES6A95D410RS2864 EF type number : 0 410 896 888

Governor

Governer design. : RSV400...1050A8C2263

: -11L

Governer no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer-spec. information Customer : NH : P 396 Motor Power KW : 176.0

# TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

40 temp. °C Tolerance °C : **←** 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : - 1.0

Prestroke mm : 2.60 Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 : **←** 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Tolerance : +- 0.50

Check

: **←** 0.75 tolerance °NW

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.75 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 137.0	Aneroid pressure hPa : 1200
Tolerance cm3/1000 strokes : +- 1.0	Del. quantity cm3/1000 strokes : 137.0 Tolerance
Check tolerance cm3/1000s. : +- 3.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/100Cs. : 8.0	
	CONTROL LEVER
Rated speed rpm : 450	control lever position degree : 98.0
Rack travel in mm : 5.50 Tolerance mm : + 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 12.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : + 2.0	Rated speed rpm : 1095 rack travel mm : 10.60
Check tolerance cm3/1000S. : +- 4.5	Rated speed rpm : 1165 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 5.5	rack travel mm : 4.00
Check tolerance cm3/1000S. : 9.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP	·
WITH GOVERNOR	Rated speed rpm : 1096 rack travel mm : 10.60
GUIDE SLEEVE POSITION	Rated speed rpm : 1166 Tolerance 1/min : +- 5
‡	rack travel mm : 4.00
control lever position degree : -3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
+	Kated speed (piii . 1500
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 1097 rack travel mm : 10.60
governor spring pre-tension	
click setting x : 4.50	Rated speed rpm : 1167 Tolerance 1/min : +- 5 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85
Rated speed rpm : 700	Tolerance mm : +- 0.55 Rated speed rpm : 1300
•	

		1	
Rated speed rpm rack travet mm	: 10.60	TORQUE CONTROL Rated speed rpm	: 700_
Rated speed rpm Tolerance 1/min rack travel mm	: <del></del> 5	rack travel mm Tolerance mm	: +- 0.10
rack travel mm Tolerance mm Rated spead rpm	: <b>←</b> 0.55	Rated speed rpm rack travel mm Tolerance mm	• 13 80
Rated speed rpm		Rated speed rpm rack travel mm Tolerance mm	: 11.20
rack travel mm Rated speed rpm	: 10.60	Rated speed rpm	: 1050 : 12.00
Tolerance 1/min rack travel mm	: <del>+-</del> 5	Tolerance mm	: + 0.10
rack travel mm Tolerance mm Rated speed rpm	: +- 0.55	ANEROID/ALTITUDE COMPENSATOR TEST	
Rated speed rpm	: 1100 : 10.60	SETTING	
rack travel mm	, , , , , , , , , , , , , , , , , , , ,	Rated speed rpm Pressure hPa	: 1200
Rated speed rpm Tolerance 1/min rack travel mm	: +- 5	rack travel mm Tolerance mm	: 13.80 : + 0.10
rack travel mm Tolerance mm Rated speed rpm		Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: – : 11.00
LOW IDLE		MEASUREMENT	
1911		Rated speed rpm	: 500
control lever position degree tolerance degree		Pressure hPa rack travel mm Tolerance mm	: 12.85
Setting point w/o	out bumper spring	Pressure hPa rack travel mm	: 600 : 11.90
Rated speed rpm rack travel mm Tolerance mm	: 450 : 5.00 : +- 0.10	+ Tolerance mm	: +- 0.20
Testing:		FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 5.50	Aneroid pressure hPa Rated speed rpm	: -
rack travel mm Rated speed rpm Tolerance 1/min	: 585	+ Rated speed rpm + Del. quantity + cm3/1000 strokes + Tolerance + cm3/1000 strokes	: 98.5
		, 55. 1000 311 0103	

Check tolerance : +- 3.0 cm3/1000s.

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quartity

cm3/1000 strokes : 164.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  8.0

Check tolerance

: +- 11.0 cm3/1000s.

# LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : + 2.0

Check tolerance : +- 4.5

cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.98 Test oil : 150 4113

Combination No. : 0 400 876 437

Injection pump

Pump designation : PES6A95D32ORS2806 EP type number : 0 410 896 898

Governor

Governer design. : RSV375...1125A0C900R

Governer no. : 0 420 233 353

Cust. part No. : 8368 54720

Customer—spec. information Customer : SISU Motor : 620D Power KW : 88.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.55
Tolerance mm : + 0.05
Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasir:g : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Beginning of delivery differende

Difference ° CS : 5.00

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.05 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 74.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
	COMMUNICATION TENER
Rated speed rpm : 375	<pre>control lever position degree : 90.0 tolerance degree : +- 4.0</pre>
Rack travel in mm: 4.00	
Tolerance min : + 0.10	RATED SPEED
Del. quantity + cm3/1000 strokes : 14.0 +	rack travel mm : 8.00 Rated speed rpm : 1145
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 +	Total and Trimiti
Check tolerance	rack travel mm : 4.90
cm3/1000s. : + 4.5	Rated speed rpm : 1195
Spreed + Tolerance +	Tolerance 1/min : +- 15
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance imm : + 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	
COLDE SEEFAE LOSILION	LOW IDLE
+	
control lever	control lever
position degree : - 3 + Rated speed rpm : 800 +	position degree : 71.0
The second secon	position degree
+	tolerance degree : +- 4.0
Rack travel in mm: 0.50	
Rack travel in mm : 0.50 Tolerance mm : + 0.20	tolerance degree : +- 4.0  Setting point w/out bumper spring
Tolerance mm : + 0.20 + governor spring +	Setting point w/out bumper spring  Rated speed rpm : 375
Tolerance mm : + 0.20 governor spring pre-tension	Setting point w/out bumper spring  Rated speed rpm : 375
Tolerance mm : + 0.20 + governor spring +	Setting point w/out bumper spring
Tolerance mm : + 0.20 governor spring pre-tension	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100
Tolerance mm : +- 0.20  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10
Tolerance mm : +- 0.20  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50
Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
Tolerance mm : +- 0.20  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 74.0	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 3.50 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50

Rated speed rpm Tolerance 1/min	: 455 : ← 30	
TORQUE CONTROL		
Rated speed rpm		
rack travel mm	: 9.05	
Tolerance mm	: ← 0.05	
Rated speed rpm	: 500	
rack travel mm	: 9.35	
Tolerance mm	: ← 0.05	
Rated speed rpm	: 980	
rack travel mm	9.00 + 0.10	
Tolerance mm	: + 0.10	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: - : 500 : 58.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 58.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: - : 500 : 58.5 : + 2.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm	: - : 500 : 58.5 : + 2.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm	: - : 500 : 58.5 : + 2.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 58.5 : + 2.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity	: - : 500 : 58.5 : + 2.0 : + 4.0 IVERY : 100 : 20.25 : + 0.75	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: - : 500 : 58.5 : + 2.0 : + 4.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000strokes Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 58.5 : + 2.0 : + 4.0 : + 4.0 IVERY : 100 : 20.25 : + 0.75 : 195.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: - : 500 : 58.5 : + 2.0 : + 4.0 IVERY : 100 : 20.25 : + 0.75 : 195.0	

Check tolerance cm3/1000S. Spreed Tolerance	: +-	4.5
cm3/1000 strokes Check tolerance	•	5.5
cm3/1000s.		9.0

End of test specification sheet

LOW IDLE

Tolerance

Rated speed rpm : 375

Rack travel in mm : 4.00 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 14.0

cm3/1000 strokes : +- 2.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.07.98 : ISO 4113

Combination No. : F 002 A0Z 097

Injection pump

Pump designation : PES6A10UD320/3RS3517 EP type number : F 002 A10 036

Governor

Governer design. : RSV550...750A7C983R

Governer no. : F 002 A26 027

Cust. part No. :

Customer-spec. information Customer : TATA Motor : 6BT Power KW : 86.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 <del>9</del>01 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : ← 1.0

Prestroke mm : 3.10 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00 Tolerance : + 0.10

Check

tolerance °NW : + 0.29

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 730

Rack travel in mm : 12.20 Tolerance mm : +- 0.05

Rack travel in mm: 4.95 Tolerance mm : + 0.10 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : FREE Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x: 3.75 CONTROL LEVER control Lever position degree : 83.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20
Rated speed rpm : 750
Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 780 Tolerance 1/min : +- 5 4.00 rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850 rack travel mm : 4.0 Rated speed rpm : 780 4.00 Tolerance 1/min : +- 15 LOW IDLE

Control lever difference Grad 11.0 tolerance degree : +- 6.0 Setting point w/out bumper spring Rated speed rpm : 550 rack travel mm : 3.95 Tolerance mm : ← 0.10 Rated speed rpm : 100 CRT min min. : > 19.00 Testing: Rated speed rpm : 550 rack travel mm : 4.95 Tolerance mm : + 0.10 rack travel mm : 2.0 Rated speed rpm : 575 2.00 Tolerance 1/min : + 30 TORQUE CONTROL Rated speed rpm : 730
rack travel mm : 12.20
Tolerance mm : + 0.05 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 13.40 Tolerance mm :  $\leftarrow 0.50$ LOW IDLE Rack travel in mm : 4.95 Tolerance mm : + 0.10 End of test specification sheet

tolerance degree : +- 4.0

N16

control lever

position degree : 77.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.07.98 : ISO 4113

Combination No. : F 002 A07 108

Injection pump

Pump designation : PES6A95D12ORS2916 EP type number : F 002 A10 010

Governor

Governer design. : RSV425...1000A0C981R

Governer no. : F 002 A20 256

Cust. part No. : 328 4546

Customer-spec. information Customer : CUMMINS

Motor

: 6BT

Power KW

: 102.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N17

x inside diameter: 2.0

x length mm :

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 9.50

Tolerance

: +- 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 11.30

Tolerance mm :  $\leftarrow$  0.05

	+ Aneroid pressure
Del. quantity cm3/1000 strokes : 98.2	+ hPa : 900 + Del. quantity
Talanana	_
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	- + cm3/1000s. : + 3.0 + Spreed
Spreed	_ + Tolerance + cm3/1000 strokes : 4.0 + Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
	- T - control lever
	position degree : 95.0
Rated speed rpm : 425	tolerance degree : +- 4.0
Rack travel in mm: 5.05	RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 10.30
Del. quantity	+ Rated speed rpm : 1040
cm3/1000 strokes : 18.5	+ Tolerance 1/min : +- 5
Tolerance	+ rack travel mm : 4.50
cm3/1000 strokes : +- 2.0 Check tolerance	+ rack travel mm : 4.50 + Rated speed rpm : 1095
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 5
Spreed 4.3	T rocerance min . 19
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 6.0	+ Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1225
cm3/1000s. : 8.0	+
	+ rack travel mm : 4.50
	+ Rated speed rpm : 1105
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Tolerance 1/min : +~ 15
	+
GUIDE SLEEVE POSITION	LOW IDLE
GOIDE SPEEDE LOSTITON	+ EOW IDLE
	+
control lever	+ control lever
position degree : FREE	+ position degree : 78.0 + tolerance degree : + 4.0
Rated speed rpm : 800	tolerance degree : + 4.0
Rack travel in mm: 0.50	Control lever difference
Tolerance mm : +- 0.20	+ Grad : 17.0
	tolerance degree : +- 6.0
governor spring	+
pre-tension	+ Setting point w/out bumper spring
click setting x : 2.50	† potentia 1. 125
	+ Rated speed rpm : 425
FILL LOAD DELTHEDY AT FILL LOAD STOP	+ rack travel mm : 4.05 + Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : → 0.10
Rated speed rpm : 1000	Rated speed rpm : 100

N18

CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 425 : 5.05 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 600 : ← 30
TORQUE CONTROL Rated speed spm rack travel mm Tolerance mm	: 1000 : 11.30 : +- 0.05
Rated speed rpm rack travel mm Tolerance nm	: 750 : 11.80 : ← 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 900
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 11.00 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.70 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 500 : 11.20 : +- 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 900 : 750
Dei. quantity cm3/1000 strokes	: 106.2

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 91.5 : + 1.0 : + 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.50 : + 0.50 : 121.5 : + 10.0 : + 15.0
LOW IDLE	
Rated speed rpm	: 425
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: 5.05 : + 0.10 : 18.5
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 29.07.98

Test oil

: ISO 4113

Combination No. : 0 401 846 990

Injection pump

Pumb designation : FE6P120A32CRS3118 EP type number : 0 411 826 726

Governor

Governer design. : RQV250...1100PA920

: -9

Governer no. : 0 421 814 105

Cust. part No. : 425663-PO? (PO3)

Customer-spec. information

Customer : VOLVO-TRUCK

Motor

: THD 102 KD

Power KW

: 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C

Tolerance °C

: **←** 2.0

Overflow valve : 2 417 413 046

Inlet press. bar :

Tolerance bar : + 0.1

1.5

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

N20

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm 2.65

: +- 0.05 Tolerance mm

Check

tolerance inm : +- J.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-

: 0-60-120-180-240 : -300

Tolerance : <del>+-</del> 0.50

Check

Phasing

tolerance °NW : +- 0.70

BASIC SETTING

Firing order

Rated speed rpm : 700

Rack travel in mm : 13.25

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 223.0

Tolerance +	guide sleeve
cm $3/1000$ strokes : $\leftarrow$ 1.0	travel mm : 3.71
4	Tolerance mm : +- 0.25
Check tolerance	
cm3/1000S. : + 4.0	Rated speed rpm : 520
CIID/10003 4.0	
	guide sleeve
Spreed +	travel mm : 4.67
+	Tolerance mm : +- 0.25
Tolerance +	
cm3/1000 strokes : 5.0 +	Rated speed rpm : 1370
<del> </del>	guide sleeve
Check tolerance	travel mm : 11.50
cm3/1000s. : 9.0	Tolerance mm : +- 0.50
(1107 10003.	roter ance min
Ţ	
200	GUIDE SLEEVE POSITION
Rated speed rpm : 250	
†	
Rack travel in mm: 5.20	control lever
Tolerance mm : $\leftarrow$ 0.10	position degree : - 1
Del. quantity	Rated speed rpm : 1185
cm3/1000 strokes : 32.0	
Tolerance	Rack travel in mm : 16.50
cm3/1000 strokes : + 2.5	Tolerance mm : +- 1.30
Check tolerance	roter ance mm 1.30
• · · · · · · · · · · · · · · · · · · ·	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance +	
cm3/1000 strokes : 5.0	Rated speed rpm : 700
Check tolerance	Aneroid pressure
cm3/1000s. : 7.0	hPa : 1200
+	Cel. quantity
1	cm3/1000 strokes : 223.0
¬-	
(R) SETTING OF INJECTION PIMP	
(B) SETTING OF INJECTION PUMP	Tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance cm3/1000 strokes : +- 1.0
	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
WITH GOVERNOR	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed
GUIDE SLEEVE TRAVEL	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
WITH GOVERNOR	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80  Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1.25	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25  Rated speed rpm : 6.82 Tolerance mm : + 0.25	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25  Rated speed rpm : 387 guide sleeve	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0  RATED SPEED
GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25  Rated speed rpm : 387 guide sleeve travel mm : 387 guide sleeve travel mm : 2.96	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 12.25
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25  Rated speed rpm : 387 guide sleeve	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 12.25 Rated speed rpm : 1135
GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : ± 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : ± 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : ± 0.25  Rated speed rpm : 387 guide sleeve travel mm : 2.96 Tolerance mm : ± 0.25	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 12.25
GUIDE SLEEVE TRAVEL  Rated speed rpm : 1146 guide sleeve travel mm : 7.80 Tolerance mm : + 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.19 Tolerance mm : + 0.25  Rated speed rpm : 1081 guide sleeve travel mm : 6.82 Tolerance mm : + 0.25  Rated speed rpm : 387 guide sleeve travel mm : 387 guide sleeve travel mm : 2.96	Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 62.0 tolerance degree : + 4.0  control lever position degree : 117.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 12.25 Rated speed rpm : 1135

rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : + 15 LOW IDLE control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 9.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 150 CRT mm min. :> 6.20Testing: Rated speed rpm : 250 rack travel mm : 5.20 Tolerance mm : + 0.10 Rated speed rpm : 310 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 13.25 Tolerance mm : + 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1200 rack travel mm : 13.25 Tolerance mm : + 0.05 Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.00 Tolerance mm : + 0.15

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 3.70
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : 0.25
Tolerance mm : + 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 134.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.00 Tolerance mm : + 0.15

## LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : + 2.5
Check tolerance
cm3/1000s. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000 strokes : 7.0

End of test specification sheet

MEASUREMENT

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.07.98 Test oil : ISO 4113

Combination No. : 0 402 046 861

Injection pump

Pump designation : FE6P11GAJ2GRS3329

EP type number : 0 412 016 743

Governor

Governer design. : RQ325/1300PA1150

Governer no. : 0 421 801 716

Cust. part No. : 1284420/6

Customer-spec. information Customer : DAF Motor : NS156M

Power KW

: 156.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 20.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW

: **←** 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 11.85

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 144.0 +	Tolerance mm : +- 0.10
+	Rated speed rpm : 590
Tolerance +	guide sleeve
cm3/1000 strokes : + 1.0 +	travel mm : 6.00
Check tolerance	Tolerance mm : +- 0.10
cm3/1000s. : +- 4.0	Rated speed rpm : 1570
1.0	guide sleeve
Spreed	travel mm : 11.50
+	Tolerance mm : + 0.50
Tolerance	
cm3/1000 strokes : 8.0 +	
Charle As Language	GUIDE SLEEVE POSITION
Check tolerance time 12.0	
T : 2.0	control lever
	position degree : 109
	Rated speed rpm : 650
Rated speed rpm : 325	nacea speca (pin , oso
+	Rack travel in mm : 20.00
Rack travel in mm: 4.50	Tolerance mm : +- 0.80
Tolerance mm : + 0.10 +	
Del. quantity +	
cm3/1000 strokes : 26.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance +	Ontail and June 4000
cm3/1000 strokes : +- 2.5 +- Check tolerance +-	Rated speed rpm : 1000 Aneroid pressure
cm3/1000s. : +- 5.0	hPa : 1000
Spreed	Del. quantity
Tolerance	cm3/1000 strokes : 144.0
cm3/1000 strokes : 4.9	Tolerance
Check tolerance	$cm3/1000$ strokes : $\leftarrow$ 1.0
cm3/1000s. : 8.0 +	Check tolerance
†	cm3/1000s. : +- 4.0
(B) SETTING OF INJECTION PUMP	Spreed Tolerance
WITH GOVERNOR	cm3/1000 strokes : 8.0
WITH GOVERNOR	Check tolerance
	cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	
+	
Rated speed rpm : 1351	
guide sleeve	CONTROL LEVER
travel mm : 6.37	andmal laves
Tolerance mm : + 0.10	control lever position degree : 93.0
Rated speed rpm : 325	tolerance degree : +- 4.0
guide sleeve	total and dagree 4.0
travel mm : 1.99	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 10.85
+	Rated speed rpm : 1345
Rated speed rpm : 1300	Tolerance 1/min : +- 5
guide sleeve	Check
travel mm : 6.00 + Tolerance mm : + 0.10 +	speed $1/\min$ : +- 10
Totelance inin : TO U. IU	rack travel mm : 4.00
Rated speed rpm : 427	Rated speed rpm : 1450
guide sleeve	Tolerance 1/min : +- 15
travel mm : 3.54	

Check speed 1/min : +- 20 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600 LOW IDLE control lever position degree : 72.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 225 CRT mm min. : > 5.90 Testing: Rated speed rpm : 325 rack travel mm : 4.50 : + 0.10 Tolerance mm rack travel mm : 2.00 Rated speed rpm : 415 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.85
Tolerance mm : +- 0.05 Rated speed rpm : 700 11.85 rack travel mm : 11.85
Tolerance mm : + 0.05 Rated speed rpm : 1300 rack travel mm : 11.85 Tolerance mm : + 0.05 Rated speed rpm : 1000 rack travel mm : 12.85 Tolerance mm : + 0.10 ANEROID/ALTITUDE

COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa : 1000 rack travel mm : 11.85 Tolerance mm : +- 0.05

Rated speed rpm : 600 Pressure hPa rack travel mm 7.35 : +- 0.20 Tolerance mm

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : rack travel mm : 370 10.75 : +- 0.05 Tolerance mm

Pressure hPa : 200 rack travel mm : 8.5 8.55 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1000 hPa Rated speed rpm : 700 Del. quantity

cm3/1000 strokes : 145.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance

: **←** 5.0 cm3/1000s.

rack travel mm : 11.85
Tolerance mm : + 0.05

Aneroid pressure

Rated speed rpm : 1000

Del. quantity

cm3/1000 strokes : 94.0

Tolerance

cm3/1000 strokes : +- 1.0 Check tolerance

: +cm3/1000s. 3.5

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 4.50 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes	:	26.0
Tolerance cm3/1000 strokes	: +-	2.5
Check tolerance cm3/1000s.	: +-	5.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	4.0
cm3/1000s.	:	8.0